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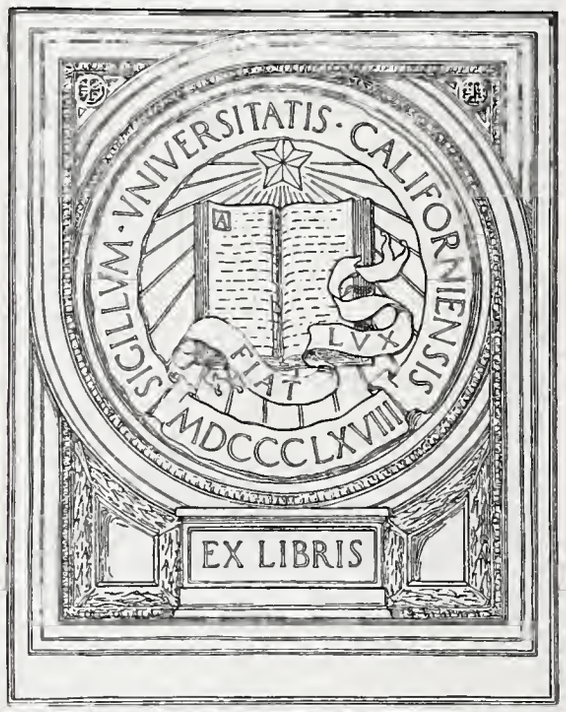

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California and Western Medicine

Official Publication of the
CALIFORNIA MEDICAL ASSOCIATION

Accredited Representative of the
NEVADA STATE MEDICAL ASSOCIATION

PRINTED AND EDITED

for the

California Medical Association

Under the direction of the House of Delegates and Council

GEORGE H. KRESS, M. D., *Editor*

VOLUME 41

JULY *to* DECEMBER, 1934

CALIFORNIA MEDICAL ASSOCIATION, FOUR FIFTY SUTTER
SAN FRANCISCO

Index—California and Western Medicine, Volume 41
July to December, 1934

INDEX ARRANGEMENT

Sequence of Subheads in Index

This index is arranged under the following headings:

I. Authors.
II. Subjects—Titles of papers.
III. Editorials.
IV. Editorial Comment articles.
V. Bedside Medicine articles.
VI. Medical History articles.
VII. Miscellany columns.
VIII. California Medical Association.
  (a) General.
  (b) Component County Societies.
  (c) Woman's Auxiliary.
IX. Department of Public Relations.
X. Cancer Commission.
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XIV. Report of Medical Examiners.

Key to Abbreviations in This Index

Or.—Original article.
C. R.—Case Report.
B. M.—Bedside Medicine.
E. C.—Editorial Comment.
C. N.—Clinical Notes.
L. M. H.—Lure of Medical History.

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August, 1934	73-144	November, 1934	289-360
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Two Volumes Yearly

CALIFORNIA AND WESTERN MEDICINE is annually issued in two volumes: the first, from January to June, inclusive; and the second from July to December, inclusive.

American Medical Association Quarterly Cumulative Index

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CALIFORNIA AND WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME 41
NUMBER 1

JULY · 1934

50 CENTS A COPY
$5.00 A YEAR

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"Entered as second-class matter at the post office at San Francisco, under the Act of March 3, 1879." Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

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OTOLARYNGOLOGY

Lafayette P. Monson, M. D.

C. M. A. MEMBERSHIP ROSTER — JULY, 1934

KEY NUMBERS FOR COUNTY MEDICAL SOCIETIES

1. Alameda County.
2. Butte County.
3. Contra Costa County.
4. Fresno County.
5. Humboldt County.
6. Imperial County.
7. Kern County.
8. Lassen-Plumas County.
9. Los Angeles County.
10. Marin County.
11. Mendocino County.
12. Merced County.
13. Monterey County.
14. Napa County.
15. Orange County.
16. Placer (El Dorado, Nevada, Sierra) County.
17. Riverside County.
18. Sacramento County.
19. San Benito County.
20. San Bernardino County.
21. San Diego County.
22. San Francisco County.
23. San Joaquin County.
24. San Luis Obispo County.
25. San Mateo County.
26. Santa Barbara County.
27. Santa Clara County.
28. Santa Cruz County.
29. Shasta County.
30. Siskiyou County.
31. Solano County.
32. Sonoma County.
33. Stanislaus County.
34. Tehama County.
35. Tulare County.
36. Kings County.
37. Ventura County.
38. Yolo-Colusa-Glenn County.
39. Yuba-Sutter County.

COUNTY SOCIETY MEMBERSHIP TOTALS

(Year 1933)

Alameda County	453
Butte County	18
Contra Costa County	44
Fresno County	110
Humboldt County	29
Imperial County	26
Kern County	49
Kings County	8
Lassen-Plumas County	9
Los Angeles County	1964
Marin County	33
Mendocino County	19
Merced County	21
Monterey County	44
Napa County	25
Orange County	107
Placer County	27
Riverside County	56
Sacramento County	134
San Benito County	5
San Bernardino County	117
San Diego County	228
San Francisco County	776
San Joaquin County	78
San Luis Obispo County	22
San Mateo County	45
Santa Barbara County	99
Santa Clara County	163
Santa Cruz County	32
Shasta County	10
Siskiyou County	16
Solano County	21
Sonoma County	44
Stanislaus County	36
Tehama County	12
Tulare County	37
Ventura County	33
Yolo-Colusa-Glenn County	25
Yuba-Sutter County	11
Active members	4986
Associate members	5
Retired members	57
Honorary members	14
Total Membership	5062

Sixty-nine members died during the year 1933. See April 1934, CALIFORNIA AND WESTERN MEDICINE, page 298, for list of deceased members.

Editor's Note.—The California Medical Association by-laws provide for an annual directory. Because every member receives the annual directory of the Board of Medical Examiners of the State of California, and in order to avoid the great cost of duplication of such a directory, the California Medical Association Council has decided to print in the official journal a simple roster of members, giving for each member the city or place of residence, with a key number to indicate the county medical society in which membership is held. For additional information concerning school of graduation, etc., the State Medical Board directory or the central office of the California Medical Association should be consulted. Errors in the list here printed should be promptly reported to the central office of the California Medical Association, Four Fifty Sutter, San Francisco.

I. ACTIVE MEMBERS

— A —

NAME	CITY	COUNTY SOCIETY NO.
Abbott, C. L.,	*Oakland*	1
Abbott, F. F.,	*Ontario*	20
Abbott, G. K.,	*Clendale*	9
Abbott, L. C.,	*San Francisco*	22
Abbott, U. S.,	*Richmond*	3
Abdun-Nur, A. S.,	*Los Angeles*	9
Abowitz, J.,	*Los Angelcs*	9
Abraham, S. V.	*Los Angeles*	9
Abramson, M. J.,	*Los Angeles*	9
Achenbach, L. W.,	*Ventura*	37
Adams, B. O.,	*Riverside*	17
Adams, B. A.,	*San Leandro*	1
Adams, B. W.,	*Oakland*	1
Adams, H. G.,	*Fresno*	4
Adams, J. H.,	*Oakland*	1
Adams, L. P.,	*Oakland*	1
Adams, W. C.,	*Oakland*	1
Adams, W. L.,	*Fresno*	4
Addis, T.,	*San Francisco*	22
Adelstein, L. J.,	*Los Angeles*	9
Adler, H. M.,	*Berkeley*	1
Adler, H. F.,	*San Francisco*	22
Agmar, A. R.,	*San Francisco*	22
Ahlem, J.,	*Livermore*	1
Ahrens, C. L.,	*Artesia*	9
Aiken, S. D.,	*San Diego*	21
Ainley, F. C.,	*Los Angeles*	9
Aitken, H. C.,	*Berkeley*	1
Alanson, M. R.,	*San Francisco*	22
Albert, J. A.,	*Newman*	33
Albert, W.,	*Los Angeles*	9
Alberty, W. M.,	*East San Diego*	21
Albi, P.,	*San Francisco*	22
Alcazar, I.,	*Los Angeles*	9
Alcon, D. N.,	*Los Angeles*	9
Alden, B. F.,	*San Francisco*	22
Alden, E.,	*Los Angeles*	9
Alden, W. C.,	*Los Angeles*	9
Alderson, H. E.,	*San Francisco*	22
Alderson, V. G.,	*Oakland*	1
Aldrich, W. S.,	*Los Angeles*	9
Alesen, L. A.,	*Los Angeles*	9
Alexander, A. A.,	*Oakland*	1
Alexander, E.,	*Oakdale*	33
Alexander, E. W.,	*San Francisco*	22
Alexander, J. H.,	*Chico*	2
Allan, J. T. M.,	*Los Angeles*	9
Allen, A. B.,	*Los Angeles*	9
Allen, C. S.,	*Los Angeles*	9
Allen, C. L.,	*Los Angeles*	9
Allen, D. M.,	*Oakland*	1
Allen, E. G.,	*Patterson*	33
Allen, H. W.,	*San Francisco*	22
Allen, J.,	*Raymond*	4
Allen, J. R.,	*Los Angeles*	9
Allen, M. R.,	*Fairfax*	10
Allen, O. K.,	*San Francisco*	22
Allen, R. E.,	Reedley	4
Allen, W. B.,	*Oakland*	1
Aller, D. I.,	*Fresno*	4
Allington, H. V.,	*Oakland*	1
Allison, C. N.,	*San Diego*	21
Allum, A. W.,	*Glendale*	9
Alsberge, E. W.,	*Clendale*	9
Alter, S. M.,	*Los Angeles*	9
Althausen, T. L.,	*San Francisco*	22
Alvarez, L. F.,	*Los Angelcs*	9
Alward, H. C.,	*Los Angelcs*	9
Amaral, E. A.,	*San Jose*	27
Ames, E. W.,	*Los Angeles*	9
Ammann, F. X., Jr.,	*Los Angeles*	9
Anderson, A. C.,	*Petaluma*	32
Anderson, A. V.,	*Pasadena*	9
Anderson, A. De M.,	*Cambria*	23
Anderson, A. E.,	*Fresno*	4
Anderson, C. W.,	*Los Angeles*	9
Anderson, C. M.,	*Hermosa Beach*	9
Anderson, E. L.,	*Los Angeles*	9
Anderson, F. N.,	*Los Angcles*	9
Anderson, F. R.,	*Campbell*	27
Anderson, H. H.,	*San Francisco*	22
Anderson, H. E.,	*Culver City*	9
Anderson, H., Jr.,	*Los Angeles*	9
Anderson, H. C.,	*Pomona*	9
Anderson, J. F.,	*Los Angeles*	9
Anderson, L. N.,	*Inglewood*	9
Anderson, N. P.,	*Los Angeles*	9
Anderson, O.,	*Santa Monica*	9
Anderson, S. B.,	*Burbank*	9
Anderton, H. S.,	*San Diego*	21
Andrews, C. B.,	*Sonoma*	32
Andrews, H.,	*Los Angeles*	9
Andrews, H. J.,	*Hollywood*	9
Andrews, H. F.,	*San Diego*	21
Andrews, J. N.,	*Los Angcles*	9
Andrews, V. L.,	*Los Angeles*	9
Andrus, L. M.,	*King City*	13
Ankele, C. W.,	*Sacramento*	18
Annis, A. J.,	*Los Angelcs*	9
Anthony, L. A.,	*Rio Vista*	31
Anton, F. L.,	*Los Angeles*	9
Appeldorn, H. H.,	*Oakland*	1
Arbuthnot, R. E.,	*Glendale*	9
Arehart, A. A.,	*Monterey*	13
Arkush, A. S.,	*Santa Monica*	9
Armen, G. H.,	*Los Angeles*	9
Armitstead, R. B.,	*Ventura*	37
Armstrong, E. L.,	*Los Angeles*	9
Armstrong, M. I.,	*Berkeley*	1
Arnett, L. A.,	*Waterford*	33
Arnold, F. L.,	*Long Beach*	9
Arnold, H. J.,	*Milpitas*	27
Arnold, H. R.,	*San Francisco*	22
Arnold, M. H.,	*San Diego*	21
Arnold, W. F.,	*Long Beach*	9
Arnot, P. H.,	*San Francisco*	22
Arthur, S. R.,	*Sacramento*	18
Arthurs, E.,	*San Francisco*	22
Ash, R. L.,	*San Francisco*	22
Ashcroft, F. E.,	*Chula Vista*	21
Ashley, N. N.,	*Oakland*	1
Ashley, R. E.,	*San Francisco*	22
Askey, E. V.,	*Los Angeles*	9
Askey, J. M.,	*Los Angeles*	9
Ashmore, F.,	*Santa Ana*	15
Atkinson, C. E.,	*Banning*	17
Atkinson, D. W.,	*San Francisco*	22
Atkinson, R. C.,	*Colfax*	16
Atsatt, R. F.,	*Santa Barbara*	26
Attwood, W. G.,	*Los Angeles*	9
Atwood, A. C.,	*Chowchilla*	12
Atwood, H. A.,	*Riverside*	17
Audrain, L. C.,	*Los Angeles*	9
Auerback, L. B.,	*Hollywood*	9
Auslen, H.,	*Oakland*	1
Austin, R. E.,	*San Diego*	21
Austin, T. C.,	*Bakersfield*	7
Avery, J. W.,	*Hollywood*	9
Avery, W. J.,	*Fresno*	4
Axline, J. T.,	*North Hollywood*	9
Ayer, E. W.,	*Oakland*	1
Ayer, P. E.,	*Los Angeles*	9
Ayers, T. F.,	*San Francisco*	22
Ayres, S., Jr.,	*Los Angeles*	9
Ayres, W.,	*Los Angelcs*	9
Azevedo, M. L.,	*Sacramento*	18

— B —

Babcock, D. W.,	*Placerville*	18
Babcock, E. S., Jr.,	*Sacramento*	18
Babcock, J. W.,	*Placerville*	18
Babcock, L. G.,	*Vernon*	9
Babcock, R. A.,	*Willits*	11
Babienco, A. T.,	*San Diego*	21
Babington, S. H.,	*Berkeley*	1
Baccus, C. F.,	*Woodstock, Ill.*	9

NAME	CITY	COUNTY SOCIETY NO.
Bachelder, B. B.,	*Sebastopol*	32
Bacher, J. A.,	*San Francisco*	22
Bachhuber, C. A.,	*Los Angeles*	9
Bachmann, G. W.,	*Santa Monica*	9
Bacigalupi, L. D.,	*San Francisco*	22
Bacon, L. H.,	*San Bernardino*	20
Baer, H.,	*Elsinore*	17
Baetz, W. G.,	*Huntington Park*	9
Bahrenburg, G. E.,	*Bakersfield*	7
Bailey, F. J.,	*Red Bluff*	34
Bailey, W.,	*San Francisco*	22
Ballly, T. E.,	*San Francisco*	22
Baiocchi, A. J.,	*San Jose*	27
Baird, C.,	*San Bernardino*	20
Baird, C. G.,	*Santa Maria*	26
Baird, H. R.,	*Sacramento*	18
Bak, E. W.,	*Los Angeles*	9
Baker, C. D.,	*Los Angeles*	9
Baker, G. L.,	*San Francisco*	22
Baker, H. V.,	*Napa*	14
Baker, John J.,	*West Los Angeles*	9
Baker, M. D.,	*San Jose*	27
Baker, R. V.,	*Avalon*	9
Baker, R. W.,	*Los Angeles*	9
Baker, W. P.,	*Santa Ana*	15
Bakewell, B.,	*Santa Barbara*	26
Baldwin, A. K.,	*Long Beach*	9
Baldwin, L. G.,	*Pasadena*	9
Baldwin, M. C.,	*Riverside*	17
Balkins, A. J.,	*Los Angeles*	9
Ball, C. D.,	*Santa Ana*	15
Ball, D. R.,	*Santa Ana*	15
Ball, J. D.,	*San Francisco*	22
Ball, J. D.,	*Santa Ana*	15
Ballard, C. H.,	*Santa Monica*	9
Ballard, S. E.,	*Long Beach*	9
Baltimore, L.,	*Los Angeles*	9
Balycat, F. S.,	*Los Angeles*	9
Bames, H. O.,	*Los Angeles*	9
Bancroft, I. R.,	*Los Angeles*	9
Banks, A. E.,	*San Diego*	21
Banks, W. H.,	*San Francisco*	22
Barber, E. M.,	*Oakland*	1
Barber, P. S.,	*Porterville*	35
Barbour, N. P.,	*Stockton*	23
Barclay, H. A.,	*San Diego*	21
Bardill, J. W.,	*Ventura*	37
Barkan, A.,	*Zurich*	22
Barkan, H.,	*San Francisco*	22
Barkan, O.,	*San Francisco*	22
Barlow, T. C.,	*Long Beach*	9
Barlow, W. J.,	*Los Angeles*	9
Barmore, M. G.,	*Calexico*	6
Barnard, F. S.,	*Los Angeles*	9
Barnard, H. D.,	*Los Angeles*	9
Barnard, H. D.,	*Los Angeles*	9
Barnard, L. B.,	*Oakland*	1
Barnes, J. W.,	*Stockton*	23
Barnes, L. B.,	*Newcastle*	16
Barnes, P. D.,	*Loomis*	16
Barnes, R. W.,	*Los Angeles*	9
Barnes, S. D.,	*Los Angeles*	9
Barnes, W. H.,	*Chico*	2
Barnett, C. W.,	*San Francisco*	22
Barnett, E. D.,	*Santa Rosa*	32
Barnett, G. D.,	*San Francisco*	27
Barnhart, W.,	*Los Angeles*	9
Baron, P. P.,	*Alameda*	30
Barr, A. L.,	*San Diego*	21
Barr, W. T.,	*Fresno*	4
Barrett, G. M.,	*San Francisco*	22
Barrette, L. C.,	*Sacramento*	18
Barron, H. C., Jr.,	*Escondido*	9
Barrow, J. V.,	*Los Angeles*	9
Barrow W. H.,	*San Diego*	21
Barry, G. L.,	*San Jose*	27
Bartle, I. B.,	*San Luis Obispo*	24
Bartholomew, J. Y.,	*San Francisco*	22
Bartholomew, T. E.,	*Calexico*	6
Bartlett, E. I.,	*San Francisco*	22
Barton, E. W.,	*Alhambra*	9
Bascom, F. S.,	*Oakland*	1
Bates, C. E. H.,	*San Francisco*	22
Bathurst, E. W.,	*Etna*	30
Baughman, W. H.,	*Oakland*	1
Baumgartner, C. J.,	*Los Angeles*	9
Bautista, M. D.,	*Stockton*	23
Baxter, C. P.,	*San Diego*	21
Baxter, D. E.,	*Glendale*	9
Baxter, F. S.,	*Oakland*	1
Bay, M. W.,	*Los Angeles*	9
Bay, S. G.,	*Los Angeles*	9
Bayer, L. M.,	*San Francisco*	22
Bayley, W. A.,	*Los Angeles*	9
Baylis, J. N.,	*San Bernardino*	20
Beach, E. C.,	*Oxnard*	37
Beach, E. W.,	*Sacramento*	18
Bear, N. K.,	*Riverside*	17
Beard, J. L.,	*Martinez*	3
Beardslee, A.,	*San Francisco*	22
Beardsley, J. R.,	*San Diego*	21
Beasley, E. M.,	*Santa Ana*	15
Beasley, H. E.,	*Los Angeles*	9
Beattie, D. A.,	*San Jose*	27
Beattie, J. I.,	*San Jose*	27
Beattie, W. A.,	*Sacramento*	18
Beatty, H. J.,	*Clinton, New Jersey*	9
Beatty, J. D.,	*Los Angeles*	9
Beauchamp, H. H.,	*Sacramento*	18
Beaudoux, H. A.,	*Oakland*	1
Beaver, H. J.,	*Palo Alto*	27
Beaver, M. G.,	*Redlands*	20
Beck, H. H.,	*Corning*	34
Beck, H. R.,	*Los Angeles*	9
Beck, J. A.,	*Salinas*	13
Beck, J. E.,	*Tulare*	35
Becka, S. J.,	*Los Angeles*	9
Becker, G. H.,	*San Francisco*	22
Becker, H. F.,	*Los Angeles*	9
Beckett, W. A.,	*New York*	9
Bedri, M. R.,	*Salinas*	13
Beebe, J. L.,	*Anaheim*	15
Beebe, L. J.,	*Santa Maria*	26
Beede, A. H.,	*Walnut Creek*	3
Beekler, A. M.,	*Santa Maria*	26
Beem, M.,	*Los Angeles*	9
Beerman, W. F.,	*San Francisco*	22
Behne, K. F.,	*Los Angeles*	9
Behneman, H. M. F.,	*San Francisco*	22
Beigelman, M.,	*Los Angeles*	9
Belford, W. W.,	*San Diego*	21
Bell, H. D.,	*Oakland*	1
Bell, H. G.,	*San Francisco*	22
Bell, H. W.,	*Bakersfield*	7
Bell, L. P.,	*Sacramento*	38
Bell, M. T.,	*Ventura*	37
Bell, T. F.,	*Oakland*	1
Bell, W. L.,	*Oakland*	1
Bellin, J. J.,	*Los Angeles*	9
Belt, A. E.,	*Los Angeles*	9
Belt, R. L.,	*Montrose*	9
Belyea, J. H.,	*Los Molinos*	34
Bender, W. L.,	*San Francisco*	22
Benner, E. A.,	*San Mateo*	25
Bennett, C. B.,	*Berkeley*	1
Bennett, C. L.,	*Los Angelcs*	9
Bennett, D. W.,	*San Francisco*	22
Bennett, E. L.,	*Fresno*	4
Bennett, E. C.,	*Ukiah*	11
Bennett, L. B.,	*Los Angeles*	9
Bennett, M. C.,	*Berkeley*	1
Bennett, W, W.,	*Los Angeles*	9
Bennetts, F. A.,	*Los Angeles*	9
Benninger, C., Jr.,	*San Francisco*	22
Benson, E. H.,	*Berkeley*	1
Benton, J. J.,	*Oakland*	1
Bepler, A. C.,	*San Francisco*	22
Berauer, J. M.,	*Los Angeles*	9
Berg, A.,	*San Francisco*	22
Berg, G. O.,	*Hollywood*	9
Berge, F. E.,	*Los Angeles*	9
Berger, A. A.,	*San Francisco*	22
Bergstrom, F. K.,	*Los Angeles*	9
Berkes, H. A.,	*Los Angeles*	9
Berkley, H. K.,	*Los Angeles*	9
Berkove, S. E.,	*Oakland*	1
Berman, P.,	*Los Angeles*	9
Bernardini, C. V.,	*San Diego*	21
Berne, C. J.,	*Los Angeles*	9
Bernstein, A.,	*San Francisco*	22
Berry, B. S.,	*Santa Maria*	26
Bertero, J.,	*Santa Maria*	26
Bertola, M.,	*San Francisco*	22
Best, E. J.,	*San Francisco*	22
Bettencourt, M. F.,	*Watsonville*	28
Bettin, M. E.,	*Los Angeles*	9
Betts, I. H.,	*Visalia*	35
Bewley, M. H.,	*Los Angelcs*	9
Bice, C. W.,	*Oakland*	1
Bicknell, H. E.,	*Long Beach*	9
Bieler, H. G.,	*Pasadena*	9
Bierman, J. M.,	*San Francisco*	22
Bigby, M. H.,	*Whittier*	9
Biggs, E. L.,	*Los Angeles*	9
Bigler, A. B.,	*San Francisco*	22
Bill, P. A.,	*San Francisco*	22
Billingsley, U. C.,	*Hayward*	1
Bilon, L. V.,	*Los Angeles*	9
Bine, R.,	*San Francisco*	22
Bingaman, E. W.,	*Salinas*	13
Bingaman, W. H.,	*Salinas*	13
Bingham, E.,	*Riverside*	17
Binkley, R. W.,	*Selma*	4
Binkley, T.,	*Sacramento*	18
Bird, A. A.,	*Oakland*	1
Birkenstock, C. F.,	*San Diego*	21
Bishop, C. O.,	*Richmond*	3
Bishop, C. R.,	*Long Beach*	9
Bishop, T. W.,	*S. Pasadena*	9
Bishop, T. E.,	*San Dicgo*	21
Bittner, C. L.,	*Sacramento*	18
Bittner, L. H.,	*Glendale*	9
Bittner, S. P.,	*Glendale*	9
Bixby, E. M.,	*San Francisco*	22
Black, B. W.,	*Oakland*	1
Black, E. C.,	*San Diego*	21
Black, H.,	*Palo Alto*	27
Blackfield, H. M.,	*San Francisco*	22
Blackmun, E. L.,	*Stockton*	23
Blackshaw, J. B.,	*Berkeley*	1
Blaine, E. S.,	*Los Angeles*	9
Blaisdell, F. E., Jr.,	*Watsonville*	28
Blake, C. R.,	*Richmond*	3
Blanchard, L. H.,	*Oakland*	1
Blanchard, T. L.,	*San Jose*	27
Bland, C.,	*Long Beach*	9
Blank, B.,	*Los Angeles*	9
Blatherwick, A. A.,	*Los Angeles*	9
Blatherwick, G. W.,	*Los Angeles*	9
Blecker, R. F.,	*Fresno*	4
Blevins, W. J.,	*Woodland*	38
Blinn, J. F.,	*Stockton*	23
Bliss, G. L.,	*Long Beach*	9
Bliss, W. P.,	*Pasadena*	9
Bloch, J. L.,	*San Pedro*	9
Block, C. A.,	*San Francisco*	22
Blodgett, H. H.,	*Beverly Hills*	9
Blodgett, W. LeR.,	*Calistoga*	14
Blong, P. H.,	*Alhambra*	9
Bloomfield, A. L.,	*San Francisco*	22
Blum, S.,	*San Francisco*	22
Blumenthal, E. L.,	*Oakland*	1
Boardman, W. W.,	*San Francisco*	22
Bobbitt, J. D.,	*San Diego*	21
Bodman, E. W.,	*Pasadena*	9
Boeck, W. C.,	*Los Angeles*	9
Boehm, C. A.,	*San Francisco*	22
Boehmer, A. C.,	*Lodi*	23
Boericke, C. C.,	*Berkeley*	1
Boess, E. C.,	*Riverside*	17
Boetticher, E. O.,	*Los Angelcs*	9
Boge, H. G. C.,	*Oakland*	1
Bogen, E.,	*Olive View*	9
Bogle, S. S.,	*Santa Rosa*	32
Boland, A. E.,	*Los Angeles*	9
Bolender, M. C.,	*Danville*	3
Boles, A.,	*Oakland*	1
Bolin, Z. E.,	*San Francisco*	22
Bolinger, H. J.,	*Lodi*	23
Boller, S.,	*Los Angeles*	9
Bollig, H. L.,	*Los Angeles*	9
Bolstad, H. C.,	*Oakland*	1
Bolze, E. H.,	*San Francisco*	22
Bonar, P. A.,	*San Francisco*	22
Bond, A. L.,	*Lindsay*	35
Bond, E. C.,	*Hanford*	36
Bond, R. E.,	*Los Angeles*	9
Bonesteel, H. T. S.,	*Los Angeles*	9
Bonfiglio, J.,	*Hollywood*	9
Bonfiglio, V.,	*Los Angeles*	9
Bonoff, K. M.,	*Los Angeles*	9
Bonura, F.,	*Los Angeles*	9
Bonynge, C. W.,	*Los Angeles*	9
Booth, J. A.,	*San Mateo*	25
Booth, M. M.,	*St. Helena*	14
Borley, R. D.,	*Half Moon Bay*	25
Bormann, G. B.,	*Hollywood*	9
Boscoe, A. R.,	*Sacramento*	18
Boskowitz, G. H.,	*San Francisco*	22
Bost, C.,	*San Francisco*	22
Bost, F. C.,	*San Francisco*	22
Bosworth, H. W.,	*Los Angeles*	9
Botsford, M. E.,	*San Francisco*	22
Bourbon, O. P.,	*Los Angeles*	9
Bowen, C. B.,	*Oakland*	1
Bowen, H. A.,	*Los Angeles*	9
Bowen, W. P.,	*Lindsay*	35
Bower, A. G.,	*Glendale*	9
Bowers, C. H.,	*Los Angeles*	9
Bowers, P. E.,	*Los Angeles*	9
Bowles, F. H.,	*Oakland*	1
Bowman, P. J.,	*Fort Bragg*	11
Bowman, R. J.,	*Los Angeles*	9
Boyce, L.,	*Los Angeles*	9
Boyce, W. A.,	*Los Angeles*	9
Boyd, E. G.,	*Los Angeles*	9
Boyd, E. F.,	*Los Angeles*	9
Boyd, H. W.,	*Los Angeles*	9
Boyd, J. P.,	*Santa Ana*	15
Boyd, R. T.,	*San Francisco*	22
Boyd, W. H.,	*Long Beach*	9
Boyer, H. R.,	*Glendale*	9
Boyer, J. I.,	*Long Beach*	9
Boyer, K. H.,	*Los Angeles*	9
Boyers, L. M.,	*Berkeley*	1
Boyle, S. F.,	*San Francisco*	22
Brady, A. L.,	*San Rafael*	10
Bramhall, R. N.,	*Sacramento*	18
Bramkamp, A. L.,	*Banning*	17
Bramwell, L.,	*Orange*	15
Branch, W. E.,	*Los Angeles*	9
Brandel, H. M.,	*Los Angeles*	9
Brandes, L.,	*Los Angeles*	9
Brandt, F. H.,	*Los Angeles*	9
Brannan, M.,	*Repressa*	18
Bransford, M. B.,	*Vacaville*	31
Bransford, S. G.,	*Suisun*	31
Brastad, J. P.,	*Anaheim*	15
Brazelton, H.,	*Oakland*	1
Breck, L. W.,	*San Quentin*	10
Breed, L. M.,	*Pasadena*	9
Breitman, H. B.,	*Los Angeles*	9
Brem, W. V.,	*Los Angeles*	9
Brendel, F. P.,	*Sacramento*	18
Breslin, F. J.,	*Los Angeles*	9

NAME	CITY	COUNTY SOCIETY NO.
Brewer, L. C.,	*Los Angeles*	9
Breyer, J. H.,	*Pasadena*	9
Bricca, C. R.,	*San Francisco*	22
Bridgman, W. R.,	*Hanford*	36
Briggs, G. A.,	*Sacramento*	18
Briggs, LeR H.,	*San Francisco*	22
Briggs, W. M.,	*Monrovia*	9
Briggs, W. R.,	*Sacramento*	18
Brigham, E.,	*Dinuba*	35
Brill, W.,	*Los Angeles*	9
Brinckerhoff, E. E.,	*Oakland*	1
Brinkman, W. F.,	*Long Beach*	9
Briner, C. C.,	*Auburn*	16
Briner, M. S.,	*Lincoln*	16
Broaddus, C. A.,	*Stockton*	23
Brockow, J. L.,	*Los Angeles*	9
Brodovsky, D.,	*San Jose*	27
Broemser, M. A.,	*San Jose*	4
Bronfeld, N.,	*Los Angeles*	9
Brooks, C. S.,	*El Centro*	6
Brooks, E. R.,	*Camino*	1
Brooks, H. T.,	*Alhambra*	9
Brooks, LeR.,	*San Francisco*	22
Bross, R. B.,	*Los Angeles*	9
Broughton, G. A.,	*Ventura*	37
Brown, A.,	*San Francisco*	22
Brown, A. L.,	*Riverside*	17
Brown, A. L.,	*San Francisco*	22
Brown, B. C. B.,	*Los Angeles*	9
Brown, B. H.,	*San Ysidro*	21
Brown, C. M.,	*Los Angeles*	9
Brown, D. F.,	*Redwood City*	25
Brown, E. O.,	*Sacramento*	18
Brown, F. A.,	*Santa Ana*	15
Brown, F. A.,	*Hayward*	1
Brown, G. D.,	*Pomona*	9
Brown, G. W.,	*Los Angeles*	9
Brown, H. A.,	*Berkeley*	1
Brown, H. A.,	*San Francisco*	22
Brown, H. C.,	*San Jose*	27
Brown, H. V.,	*Glendale*	9
Brown, J. M.,	*Los Angeles*	9
Brown, J. R.,	*Los Angeles*	9
Brown, M. H.,	*Los Angeles*	9
Brown, N. N.,	*Bakersfield*	7
Brown, P. K.,	*San Francisco*	22
Brown, R.,	*Santa Barbara*	26
Brown, R.,	*San Francisco*	22
Brown, R. H.,	*Pasadena*	9
Brown, T. H.,	*Orland*	38
Brown, W. H.,	*Palo Alto*	27
Browne, F. E.,	*Los Angeles*	9
Browne, G. C.,	*Oakland*	1
Brownfield, W. H.,	*Los Angeles*	9
Brownlie, J. W.,	*Vallejo*	31
Brownsberger, C.,	*Glendale*	9
Bruck, E. L.,	*San Francisco*	22
Bruckman, F. S.,	*San Francisco*	22
Bruckman, H.,	*San Jose*	27
Bruff, W. C.,	*Whittier*	9
Bruin, M. R.,	*Los Angeles*	9
Bruman, A. K.,	*San Francisco*	22
Brumbaugh, D. H.,	*Redlands*	20
Brumwell, D.,	*King City*	13
Brunemeier, E. H.,	*Placentia*	15
Bruner, F. M.,	*Ferndale*	5
Brunie, L. J.,	*Pasadena*	9
Brunie, Y. S.,	*Pasadena*	9
Bruning, E. F.,	*Santa Ana*	15
Brunn, H.,	*San Francisco*	22
Brusco, H. D.,	*San Francisco*	22
Brush, N. H.,	*Santa Barbara*	26
Brust, P. R.,	*San Diego*	21
Bryan, L.,	*San Francisco*	22
Bryant, D. C.,	*Claremont*	9
Bryant, H. E.,	*Los Angeles*	9
Buchanan, R. A.,	*Lodi*	23
Bucher, W. H.,	*Olive View*	9
Buchner, G. O. H.,	*Bakersfield*	7
Buck, L. W.,	*San Francisco*	22
Buckell, A. E. T.,	*Oakland*	1
Bucklngham, J. R.,	*Los Angeles*	9
Buckley, T. I.,	*Oakland*	1
Budge, E. S.,	*Los Angeles*	9
Bull, E. C.,	*San Francisco*	22
Bullard, C. T.,	*King City*	13
Bullis, J. A. E.,	*Los Angeles*	9
Bullis, R. O.,	*Los Angeles*	9
Bullitt, J. B.,	*San Jose*	27
Bullock, A. S.,	*Alhambra*	9
Bulpitt, H. G.,	*Santa Monica*	9
Bulpitt, J. M.,	*Santa Ana*	15
Bulpitt, P. A.,	*Santa Monica*	9
Bulpitt, Z. E. N.,	*Santa Ana*	15
Bulson, C. H.,	*Napa*	14
Bumgarner, G. M.,	*Richmond*	3
Bumgarner, J. W.,	*Richmond*	3
Bunnell, S.,	*San Francisco*	22
Burchfiel, C. M.,	*San Jose*	27
Burden, H. S.,	*Sacramento*	18
Burg, B.,	*Oakland*	1
Burge, M. H.,	*Los Angeles*	9
Burger, F. A.,	*El Centro*	6
Burger, T. O.,	*San Diego*	21
Burk, C. E.,	*Loma Linda*	20
Burke, A. M. B.,	*Alameda*	1
Burke, D. V.,	*Berkeley*	1
Burke, E. W.,	*Redlands*	20
Burke, G. R.,	*Alameda*	1
Burke, G. T.,	*Pasadena*	9
Burkelman, A.,	*Los Angeles*	9
Burkhard, W. G.,	*San Francisco*	22
Burks, F. L. R.,	*Fresno*	4
Burlew, J. M.,	*Santa Ana*	15
Burlingame, R. W.,	*San Francisco*	22
Burnett, C. I.,	*Susanville*	8
Burnham, C. J.,	*Berkeley*	1
Burnham, C. J., Jr.,	*Berkeley*	1
Burnham, DeW., K.,	*San Francisco*	22
Burnham, P. S.,	*Los Angeles*	9
Burns, E. M.,	*Huntington Park*	9
Burns, G. C.,	*Los Angeles*	9
Burns, T. S.,	*San Francisco*	22
Burnside, C.,	*Hollywood*	9
Burrall, G. M.,	*Los Angeles*	9
Burre, S. P.,	*Eureka*	5
Burrows, C. A.,	*Los Angeles*	9
Burrows, J. R.,	*San Francisco*	22
Burrows, L. A.,	*Los Angeles*	9
Burrows, M. T.,	*Pasadena*	9
Bursell, A.,	*Mountain View*	27
Burtness, H. I.,	*Santa Barbara*	26
Burton, F. A.,	*San Diego*	21
Burwell, L. C.,	*Los Angeles*	9
Busby, J. L.,	*Pasadena*	9
Bush, H. C.,	*Livermore*	1
Buskirk, W. H.,	*Los Angeles*	9
Bussey, D. G.,	*Avalon*	9
Butler, E.,	*San Francisco*	22
Butler, F. O.,	*Eldridge*	32
Butler, J. B. V.,	*San Luis Obispo*	24
Butler, K. W.,	*Madera*	4
Butler, O. W.,	*Los Angeles*	9
Butler, W. D.,	*San Luis Obispo*	24
Butt, E. G.,	*Redondo Beach*	9
Butterfield, A. DeF.,	*National City*	21
Butterfield, E. R.,	*Burbank*	9
Butzin, T. A.,	*Beverly Hills*	9
Byers, W. M.,	*Van Nuys*	9
Byington, F. S.,	*Los Angeles*	9
Byington, P. C.,	*Modesto*	33
Byrnes, R. L.,	*Los Angeles*	9
Byron, R. L.,	*Los Angeles*	9
Byron, W. P.,	*Lemoore*	36

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NAME	CITY	COUNTY SOCIETY NO.
Cady, D. W.,	*Pasadena*	9
Cady, F. P.,	*Los Angeles*	9
Cahen, C. G.,	*Los Angeles*	9
Cahoon, G. W.,	*Los Angeles*	9
Cain, W. T.,	*Gardena*	9
Calaway, A. A.,	*Fresno*	4
Calder, D. H.,	*Los Angeles*	9
Calkins, J. W.,	*Oakland*	1
Callander, C. L.,	*San Francisco*	22
Callaway, A. A.,	*Fresno*	4
Callaway, W. O.,	*Burlingame*	25
Callison, F. W.,	*San Francisco*	22
Calvin, G. F.,	*Oakland*	1
Cameron, A. C.,	*Los Angeles*	9
Cameron, L. C.,	*Santa Ana*	15
Cameron, M. C.,	*Los Angeles*	9
Cameron, W. A.,	*Los Angeles*	9
Camp, J. W.,	*La Habra*	15
Campbell, C. R.,	*San Jose*	27
Campbell, C. C.,	*Long Beach*	9
Campbell, G. E.,	*Pasadena*	9
Campbell, H. G.,	*Lindsay*	35
Campbell, H. S.,	*Los Angeles*	9
Campbell, J. V.,	*Oakland*	1
Campbell, J. R. U.,	*Dunsmuir*	30
Campbell, L. G.,	*Pasadena*	9
Campbell, L. D.,	*San Jose*	27
Campbell, M. P.,	*San Francisco*	22
Campbell, M.,	*Los Angeles*	9
Campbell, R. A.,	*Los Angeles*	9
Campbell, V. E.,	*Fresno*	4
Campbell, W. H.,	*Santa Barbara*	26
Campiche, P. S.,	*San Francisco*	22
Canby, C. B.,	*Van Nuys*	9
Canelo, C. K.,	*San Jose*	27
Canfield, M. C.,	*El Centro*	6
Canfield, M. N.,	*Redlands*	20
Cannon, F. M.,	*Point Reyes*	10
Cantoni, A. J.,	*San Diego*	21
Card, T. A.,	*Riverside*	17
Carden, J. J.,	*San Francisco*	1
Carey, H. B.,	*San Francisco*	22
Carey, T. S.,	*Los Angeles*	9
Carlile, M. N.,	*Lakeside*	21
Carlson C. M.,	*Santa Rosa*	32
Carlson, E.,	*San Francisco*	22
Carlson, F. J.,	*Oakland*	1
Carmack, J. C.,	*San Bernardino*	20
Carpenter, F. L.,	*Berkeley*	1
Carpenter, H. C.,	*Berkeley*	1
Carpenter, H. L.,	*Richmond*	3
Carr, J. L.,	*San Francisco*	22
Carroll, J. J.,	*San Francisco*	22
Carroll, R. L.,	*Los Angeles*	9
Carroll, W. A.,	*San Francisco*	22
Carson, D. A.,	*San Francisco*	22
Carson, G. R.,	*San Francisco*	22
Carter, A. E.,	*North Hollywood*	9
Carter, C. E.,	*Pasadena*	9
Carter, F. H.,	*San Diego*	21
Carter, M. G.,	*Los Angeles*	9
Carter, R. A.,	*Los Angeles*	9
Carter, R. S.,	*San Diego*	21
Carter, W. E.,	*San Francisco*	1
Carter, W. N.,	*Los Angeles*	9
Cartmell, T. M.,	*Los Angeles*	9
Cartwright, E. W.,	*Oceanside*	21
Caruso, T. D.,	*Los Angeles*	9
Carver, W. F.,	*Glendale*	9
Carver, W. F., Jr.,	*Hollywood*	9
Cary, N. A.,	*Oakland*	1
Case, C. E.,	*Santa Maria*	26
Case, L. W.,	*Pomona*	9
Casey, H. A.,	*Oakland*	1
Casey, T. J.,	*Oakland*	1
Caskey, C. R.,	*Los Angeles*	9
Casper, E. J.,	*San Francisco*	22
Casse, D.,	*Los Angeles*	9
Cassell, I.,	*San Francisco*	27
Cates, H. B.,	*Los Angeles*	9
Catton, J.,	*San Francisco*	22
Cavanaugh, L. A.,	*Santa Barbara*	26
Cecil, A. B.,	*Los Angeles*	9
Cecil, J. J.,	*Patton*	20
Cerf, A. E.,	*San Francisco*	22
Chaffee, B. S.,	*Long Beach*	9
Chaffin, G. L.,	*Los Angeles*	9
Chaffin, R. C.,	*Los Angeles*	9
Chaimov, A. S.,	*San Francisco*	22
Chain, J. N.,	*Eureka*	5
Chalmers, J. F.,	*La Jolla*	21
Chaloupka, H. R.,	*Los Angeles*	9
Chamberlain, B. H.,	*Alhambra*	9
Chamberlain, G. L.,	*Oakland*	1
Chamberlain, W. E.,	*Philadelphia*	22
Chamberlin, H. H.,	*Glendora*	9
Chambers, S. O.,	*Los Angeles*	9
Chambers, W. E.,	*Kansas City*	1
Chamblee, W. F.,	*Lemoore*	36
Champion, J. A.,	*Colton*	20
Chandler, L. R.,	*San Francisco*	22
Chaney, L. A.,	*Los Angeles*	9
Chang, D. K.,	*San Francisco*	22
Channell, W. L.,	*Oakland*	1
Chapman, G. E.,	*San Francisco*	22
Chapman, H. S.,	*Stockton*	23
Chapman, J. F.,	*Pasadena*	9
Chapman, L. S.,	*Los Angeles*	9
Chapman, L. E.,	*Gerber*	34
Chapman, W. M.,	*Ontario*	20
Chapman, W. H.,	*Blythe*	17
Chappell, A. E.,	*Imola*	14
Chappell, G. E.,	*Sacramento*	18
Chappell, H. W.,	*Los Angeles*	9
Charles, H. L.,	*Alhambra*	9
Charlesworth, I. E.,	*Imola*	14
Charlton, A. T.,	*Whittier*	9
Charlton, C. F.,	*Pasadena*	9
Charnock, D. A.,	*Los Angeles*	9
Chase, A. E.,	*Santa Ana*	15
Chase, A. S.,	*Los Angeles*	9
Chase, F. H.,	*Los Angeles*	9
Chase, R. E.,	*Glendale*	9
Chavez, M.,	*Los Angeles*	9
Cheney, G.,	*San Francisco*	22
Chency, L. D.,	*Los Angeles*	9
Cheney, M. C.,	*Berkeley*	1
Cheney, W. F.,	*San Francisco*	22
Cherry, C. F.,	*Los Angeles*	9
Cherry, W. S.,	*Rialto*	20
Chesbro, E. J.,	*Gilroy*	27
Chiapella, J. O.,	*Chico*	2
Chidester, W. C.,	*San Mateo*	25
Childress, M. H.,	*Ione*	18
Childrey, J. H.,	*Santa Barbara*	26
Chilton, F. N.,	*San Jose*	27
Ching, P. S.,	*Fresno*	4
Chipman, E. D.,	*San Francisco*	22
Chipman, W. D.,	*Los Angeles*	9
Chouret, E. E.,	*Riverbank*	33
Christensen, A. C.,	*Glendale*	9
Christensen, E. L.,	*Los Angeles*	9
Christensen, G. E.,	*Los Angeles*	9
Christensen, W.,	*Los Angeles*	9
Christensen, W. M.,	*Eagle Rock*	9
Christian, J. T.,	*Galt*	18
Christierson, S. von,	*San Francisco*	22
Christman, P. W.,	*Sacramento*	18
Christopherson, E. H.,	*San Diego*	21
Church, C. H.,	*Berkeley*	1
Church, I. O.,	*Oakland*	1
Church, M. V.,	*Norwalk*	9
Churchill, J. F.,	*San Diego*	21
Cilley, H. A.,	*San Jose*	27
Citron, J. W.,	*Oakland*	1
Clark, C. W.,	*San Rafael*	10

NAME	CITY	COUNTY SOCIETY NO.
Clark, D. M.,	*Santa Barbara*	26
Clark, D. G.,	*Santa Paula*	37
Clark, E. P.,	*Los Angeles*	9
Clark, E. B.,	*Stanford University*	27
Clark, G. S.,	*Los Angeles*	9
Clark, I. S.,	*Long Beach*	9
Clark, J. W.,	*Santa Rosa*	32
Clark, J. A.,	*Gilroy*	27
Clark, J. L.,	*Santa Ana*	15
Clark, L. J.,	*Hemet*	17
Clark, M. F.,	*San Francisco*	1
Clark, T. J.,	*Oakland*	1
Clark, V. G.,	*San Diego*	21
Clark, W. F.,	*Los Angeles*	9
Clark, W. S.,	*Ventura*	37
Clark, W. A.,	*Pasadena*	9
Clark, W. R. P.,	*San Francisco*	22
Clarke, A. F.,	*Oakland*	1
Clarke, F. B.,	*Long Beach*	9
Clarke, G. W.,	*San Bernardino*	20
Clarke, L. H.,	*Riverside*	17
Clarke, R. M.,	*Los Angeles*	9
Clarke, W. T.,	*Los Angeles*	9
Clattenburg, H. A.,	*Redwood City*	25
Clay, H. E.,	*San Francisco*	22
Clayton, J. H.,	*Los Angeles*	9
Cleary, E. W.,	*San Francisco*	22
Cleary, G. G.,	*San Francisco*	22
Cleave, D. C.,	*San Francisco*	22
Clecak, N. J.,	*Oakland*	1
Cleeves, M.,	*La Crescenta*	9
Cleland, H. O.,	*Ukiah*	11
Clemons, E. J.,	*Los Angeles*	9
Cleveland, L. S.,	*San Jose*	27
Cline, J. W.,	*San Francisco*	22
Clock, C. J.,	*Redlands*	20
Clough F. E.,	*San Bernardino*	20
Clymer, H. V.,	*Fairfield*	31
Coate, C. R.,	*Whittier*	9
Coates, G. L., Jr.,	*Martinez*	3
Coblentz, L. B.,	*San Francisco*	22
Coblentz, Z. B.,	*Santa Maria*	26
Coehran, G. V.,	*Oakland*	1
Coehran, G. H.,	*Los Angeles*	9
Coehran, R. C.,	*Yorba Linda*	15
Cody, G. L.,	*Santa Paula*	37
Coe, H. C.,	*Oakland*	1
Coeur-Barron, F. H.,	*Los Angeles*	9
Coffey, G. C.,	*Ventura*	37
Coffey, E. C.,	*Orland*	38
Coffey, S. E.,	*Orland*	38
Coffey, W. B.,	*San Francisco*	22
Coffin, H. W.,	*Los Angeles*	9
Coghlan, C. C.,	*Los Angeles*	9
Cohen, M.,	*San Francisco*	22
Cohn, A. L.,	*San Francisco*	22
Cohn, H. J.,	*San Francisco*	22
Cohn, J.,	*Los Angeles*	9
Cohn, M. L.,	*San Francisco*	22
Cohn, S.,	*San Francisco*	22
Colburn, J. M.,	*Riverside*	17
Colby, E. G.,	*San Diego*	21
Cole, E. R.,	*Callahan*	30
Cole, G. L.,	*Los Angeles*	9
Cole, W.,	*Long Beach*	9
Coleman, B. E.,	*Los Angeles*	9
Coller, G. J.,	*Los Angeles*	9
Collings, H. A.,	*Susanville*	8
Collins, A. W.,	*San Francisco*	22
Collins, C. D.,	*Fresno*	4
Collins, F. K.,	*Los Angeles*	9
Collins, J. L.,	*Turlock*	33
Collins, M. C.,	*Turlock*	33
Collis, W. H. L.,	*Stockton*	23
Collischonn, P.,	*San Francisco*	22
Colver, B. N.,	*Glendale*	9
Comfort, H. W.,	*Fortuna*	5
Commons, E. L.,	*Los Angeles*	9
Compton, C. S.,	*Bakersfield*	7
Comstock, B. W.,	*Los Angeles*	9
Comstock, D. D.,	*Los Angeles*	9
Condit, J. C.,	*Oakland*	1
Condit, J. D.,	*Pasadena*	9
Congdon, W. R.,	*Santa Cruz*	28
Conlan, F. J. S.,	*San Francisco*	22
Conlan, P. T.,	*Los Angeles*	9
Conley, W. T.,	*Hollywood*	9
Conn, C. E.,	*Los Angeles*	9
Connell, J. A.,	*Riverside*	17
Conner, A. W.,	*San Jose*	27
Connor, C. L.,	*San Francisco*	22
Conover, G. D.,	*Santa Monica*	9
Conrad, A. H.,	*Perris*	17
Conser, W. H.,	*Guadalupe*	26
Conzelmann, F. J.,	*Stockton*	23
Coodley, O.,	*Los Angeles*	9
Cook, C. S.,	*Los Angeles*	9
Cook, C. W.,	*Los Angeles*	9
Cook, E. J.,	*Los Angeles*	9
Cook, E. F.,	*Los Angeles*	9
Cook, E. P.,	*San Jose*	27
Cook, J. D.,	*Olive View*	9
Cook, O. S.,	*Sacramento*	18
Cook, W. C.,	*Los Angeles*	9
Cook, W. P.,	*Los Angeles*	9
Cooke, A. B.,	*Los Angeles*	9
Cooke, W. C.,	*San Diego*	21
Cooley, C. L.,	*San Francisco*	22
Coon, G. W.,	*Riverside*	17
Cooper, A. J.,	*San Diego*	21
Cooper, B.,	*Arcata*	5
Cooper, C. M.,	*San Francisco*	22
Cooper, F. G.,	*Huntington Park*	9
Cooper, G. P.,	*Angels Camp*	23
Cooper, J. A.,	*Modesto*	33
Cooper, T. E.,	*Davis*	38
Cooper, W.,	*Palo Alto*	27
Corbin, D. E.,	*San Diego*	21
Cordes, F. C.,	*San Francisco*	22
Cornell, H. D.,	*San Diego*	21
Corneille, J. G.,	*Altadena*	1
Cornett, W. F.,	*Pasadena*	9
Cornwall, T. W.,	*San Francisco*	22
Corr, W. P.,	*Los Angeles*	9
Cortright, C. B.,	*Berkeley*	1
Cosgrove, C. P.,	*Los Angeles*	9
Cosgrove, J. B.,	*Los Angeles*	9
Coshow, G. H.,	*Carpinteria*	26
Costolow, W. E.,	*Los Angeles*	9
Cottle, C. C.,	*Los Angeles*	9
Cottrell, C. C.,	*Scotia*	5
Cottrell, E. L.,	*San Jose*	27
Cottrell, J. C.,	*Long Beach*	9
Couey, E. J.,	*Fresno*	4
Counter, C. E.,	*Buena Park*	15
Courville, C. B.,	*Los Angeles*	9
Cowan, A. B.,	*Fresno*	4
Cowgill, C. H.,	*Huntington Park*	9
Cowin C. C.,	*Hollywood*	9
Cowles, D. C.,	*Fullerton*	15
Coyle, J. D.,	*Sacramento*	18
Cox, B. E.,	*Fresno*	4
Cox, G. W.,	*San Francisco*	22
Cox, J. E.,	*Coalinga*	4
Cox, T. J.,	*San Francisco*	22
Cox, W. J.,	*San Francisco*	22
Coyle, J. D.,	*Sacramento*	18
Coyne, A. E.,	*Los Angeles*	9
Crabtree, E. H.,	*San Diego*	21
Crabtree, W. C.,	*San Diego*	21
Craft, E. D.,	*Los Angeles*	9
Crahan, M. E.,	*Los Angeles*	9
Craig, J. B.,	*Upland*	20
Craig, L. G.,	*Pasadena*	9
Craig, R. G.,	*San Francisco*	22
Craig, S. A.,	*Ontario*	20
Craik, C. W.,	*Venice*	9
Crane, C. C.,	*San Francisco*	22
Crane, C.,	*Fernbridge*	5
Crane, E. H.,	*Inglewood*	9
Crane, H. W.,	*Berkeley*	1
Crane, J. J.,	*Los Angeles*	9
Crane, W. R.,	*Los Angeles*	9
Crane, W. W.,	*Oakland*	1
Craven, L. L.,	*Glendale*	9
Craviotto, C. L.,	*Stockton*	23
Craviotto, J. V.,	*Stockton*	23
Crawford, J. W.,	*San Francisco*	22
Crawford, W. W.,	*San Diego*	21
Crawshaw, J. A.,	*Hanford*	36
Crease, F. J.,	*Bakersfield*	9
Crease, H. G.,	*Bakersfield*	7
Cress, W. W.,	*Sacramento*	18
Cresson, M.,	*Santa Barbara*	26
Crew D. A.,	*San Luis Obispo*	24
Crilley, C. H.,	*Los Angeles*	9
Crisp, N. J.,	*Benicia*	31
Crispin, E. L.,	*Los Angeles*	9
Crockett, C. A.,	*San Francisco*	22
Crockett, H. C.,	*Hayward*	1
Croft, M. E.,	*Ocean Park*	9
Crooks, S A.,	*Loma Linda*	20
Crosby, D.,	*Oakland*	1
Cross, W. W.,	*Oakland*	1
Crossan, J. W.,	*Los Angeles*	9
Crossen, A. S.,	*Weimar*	16
Crow, L. B.,	*San Francisco*	22
Crowe, H. E.,	*Los Angeles*	9
Crowl, V. C.,	*Huntington Park*	9
Crowley, E.,	*Santa Maria*	26
Crozier, H. C.,	*Los Angeles*	9
Cruikshank, G. H.,	*San Diego*	21
Crum, R. A.,	*Oakland*	1
Crusan, R. E.,	*Monrovia*	9
Cryst, J. H.,	*Los Angeles*	9
Cummings, R. S.,	*Los Angeles*	9
Cummings, R. A.,	*Los Angeles*	9
Cuneo, J. C.,	*San Jose*	27
Cuneo, P. J.,	*Bakersfield*	7
Cunnane, P. J.,	*Los Angeles*	9
Cunnane, T. B.,	*Los Angeles*	9
Cunningham, R. L.,	*Los Angeles*	9
Cunningham, R. L.,	*Berkeley*	1
Cunningham, T. M.,	*La Mesa*	21
Curdts, C. E.,	*Oakland*	1
Currey, H. M.,	*Santa Ana*	15
Currie, A. H.,	*Los Angeles*	9
Curtis, C. G.,	*Brea*	15
Cushman, G. F.,	*San Francisco*	22
Cushman, R. A.,	*Talmage*	11
Custer, L. R.,	*San Francisco*	22
Cutler, J. B.,	*San Francisco*	9
Cutler, O. I.,	*Loma Linda*	20
Cutter, R. K.,	*Berkeley*	1
Cutting, G. R.,	*Delano*	7
Cutting, J. A.,	*Agnew*	27

— D —

Dabney, T. G.,	*San Francisco*	1
Dahleen, H. E.,	*San Jose*	27
Dahlgren, R. W.,	*Fresno*	4
Dailey, W. J.,	*Oakland*	1
Daily, K.,	*Richmond*	3
Dakin, W. B.,	*Los Angeles*	9
Dale, C. L.,	*Loma Linda*	20
d'Alessio, J. A.,	*Santa Barbara*	26
Dallal, J. M.,	*San Mateo*	25
Dallas, D. A.,	*San Francisco*	22
Daly, L. E.,	*Needles*	20
Dameron, J. D.,	*Stockton*	23
Damkroeger, H.,	*San Francisco*	22
Daniel, W. H.,	*Los Angeles*	9
Dannenbaum, S. R.,	*San Francisco*	22
Darling, H. H.,	*San Francisco*	22
Dart, A. E.,	*Oakland*	1
Dashiell, W. A.,	*Los Angeles*	9
Dassett, J. W.,	*Dos Palos*	12
Dau, N J.,	*Fresno*	4
Davenport, J. D.,	*Los Angeles*	9
David, R. A.,	*Los Angeles*	9
Davidson, B. R.,	*Brawley*	6
Davies, B. C.,	*Los Angeles*	9
Davis, A. D.,	*San Francisco*	22
Davis, A. S.,	*Oakland*	1
Davis, C. L.,	*San Diego*	21
Davis, E. A.,	*San Francisco*	22
Davis, F. J.,	*Westwood*	8
Davis, F. J., Jr.,	*Westwood*	8
Davis, H. H.,	*El Segundo*	9
Davis, H. W.,	*San Francisco*	22
Davis, H. J.,	*Sacramento*	18
Davis, K. S.,	*Los Angeles*	9
Davison, C. L.,	*Los Angeles*	9
Davison, S. T.,	*San Francisco*	22
Davitt, G. G.,	*Los Angeles*	9
Dawson, G. I.,	*Napa*	14
Day, E. C.,	*Laguna Beach*	15
Day, P. W.,	*Repressa*	18
Day, R. V.,	*Los Angeles*	9
Dazey, G. K.,	*Santa Monica*	9
Deacon, G.,	*Pasadena*	9
Deamer, W. C.,	*San Francisco*	22
Dean, J. R.,	*Los Angeles*	9
Deane, L. C.,	*San Francisco*	22
Dearing, B. F.,	*San Francisco*	22
Debenham, M. W.,	*San Francisco*	22
Dearborn, R. R.,	*Madera*	3
de Campos, P. de A. R.,	*Hanford*	36
Decker, C. W.,	*Los Angeles*	9
Deering, W. E.,	*Hollywood*	9
Delamere, G. S.,	*Marysville*	39
DeLancey, C. A.,	*San Rafael*	10
DeLappe, F. R.,	*Modesto*	33
Delprat, G. D., Jr.,	*San Francisco*	22
Delprat, J. L. P.,	*San Francisco*	22
Dempsey, R. B.,	*Vallejo*	31
Denman, C. H.,	*Berkeley*	1
Dennis, H. O.,	*Beverly Hills*	9
Denton, W. L.,	*Trona*	20
DePuy, C. A.,	*Oakland*	1
Derriek, J. S.,	*Los Angeles*	9
Desimone, L. O.,	*Los Angeles*	9
Desmond, M. A.,	*Santa Monica*	9
Desparois, G. B.,	*Los Angeles*	9
Desrosier, G. W.,	*Colusa*	38
Desser, A. L.,	*Los Angeles*	9
Detling, F. E.,	*Los Angeles*	9
Devin, S. B.,	*Los Angeles*	9
Dewey, E. B.,	*Pasadena*	9
Dewey, E. T.,	*San Francisco*	22
Dewey, H. G.,	*Yosemite*	12
Diek, P. J.,	*Oakland*	1
Dickerson, D. G.,	*Los Angeles*	9
Diekerson, H. W.,	*San Diego*	21
Diekerson, W. L.,	*Long Beach*	9
Diekey, C. D., Jr.,	*Los Angeles*	9
Diekey, C. A.,	*San Francisco*	22
Diekie, W. M.,	*Berkeley*	1
Diekinson, A. E.,	*Los Gatos*	27
Diekinson, C. C.,	*McCloud*	30
Dickson, A. R.,	*Battle Creek, Mich.*	9
Diekson, E. C.,	*San Francisco*	22
Didier, F. W.,	*Wheatland*	39
Diederich, O. P.,	*Fresno*	4
Diefenbach, W. E.,	*La Jolla*	21
Dieffenbacher, P. F.,	*Jamestown*	23
Diepenbroek, A. B.,	*San Francisco*	22
Dieterle, K. L,	*Los Angeles*	9
Dietrich, H.,	*Los Angeles*	9
Dietz, H. L.,	*Oakland*	1
Dillingham, F. S.,	*Los Angeles*	9
Dillon, E. T.,	*Los Angeles*	9
Dillon, G. P.,	*Sacramento*	18

NAME	CITY	COUNTY SOCIETY NO.
Dillon, J. R.,	*San Francisco*	22
Dillon, V. M.,	*San Francisco*	22
Dillworth, W. D.,	*Pasadena*	9
Dixon, H. L.,	*Southgate*	9
Dixon, H. B.,	*San Francisco*	22
Doane, F. L.,	*Red Bluff*	34
Doane, P. S.,	*Pasadena*	9
Doek, G.,	*Pasadena*	9
Dock, W.,	*San Francisco*	22
Dodge, W.,	*Los Angeles*	9
Dolan, P. E.,	*Livermore*	1
Dole, K. L.,	*Redlands*	20
Dolley, F. S.,	*Los Angeles*	9
Domann, A. H.,	*Orange*	15
Donald, W. G.,	*Berkeley*	1
Donohoe, E. C.,	*Glendale*	9
Donovan, M.,	*San Francisco*	22
Doran, A. V.,	*Vallejo*	31
Dormody, H. L.,	*Monterey*	13
Dormody, H. F.,	*Monterey*	13
Dorr, W. R.,	*Arlington*	17
Dotson, E. E., Jr.,	*Escondido*	21
Dougall, J. P.,	*Los Angeles*	9
Dougan, S.,	*San Jose*	27
Dougherty, E. E.,	*Los Angeles*	9
Dougherty, J. A.,	*Oakland*	1
Dougherty, P. S.,	*Los Angeles*	9
Doughty, J. F.,	*Tracy*	23
Douglass, P.,	*Keene*	7
Dow, J. N.,	*Los Angeles*	9
Dowd, R. E.,	*San Bernardino*	20
Dowling, S. W.,	*Santa Cruz*	28
Downing, S. R.,	*Oakland*	1
Downs, A. J.,	*Los Angeles*	9
Downs, L.,	*Hollywood*	9
Doyle, G. P.,	*Berkeley*	1
Doyle, J. C.,	*Los Angeles*	9
Doyle, J. B.,	*Los Angeles*	9
Doyle, J. J. L.,	*Chico*	2
Dozier, D. F.,	*Sacramento*	18
Dozier, E.,	*Redding*	29
Dozier, L.,	*Stockton*	23
Dozier, T. J.,	*Antioch*	3
Drace, C. G.,	*Ojai*	37
Dragoo, S. V.,	*Avenal*	36
Drake, D. D.,	*San Francisco*	22
Drake, J. C.,	*Kerman*	4
Draper, D. B.,	*San Jose*	27
Drees, L. A.,	*San Francisco*	22
Drennan, P. G.,	*Oakland*	1
Dresel, R. L.,	*San Francisco*	22
Drucks, E. S.,	*Oakland*	1
Drummond, T. A.,	*Randsburg*	20
Dryden, F. M.,	*Pasadena*	9
Dryer, D. S.,	*Los Angeles*	9
Dryer, R. G.,	*Los Angeles*	9
Drysdale, G. N.,	*Sacramento*	18
DuBois, C. W.,	*Los Angeles*	9
Dudley, H. W.,	*San Rafael*	10
Dufficy, G. W.,	*Sacramento*	18
Duffield, W.,	*Los Angeles*	9
Dukes, C. A.,	*Oakland*	1
Dunbar, W. V.,	*San Pedro*	9
Duncan, J. A.,	*Marysville*	39
Duncan, M. V.,	*Lompoc*	26
Dunean, R. D.,	*Los Angeles*	9
Duncan, W. C.,	*Los Angeles*	9
Dundas, R. C.,	*Los Angeles*	9
Dunievitz, M.,	*Auburn*	16
Dunklee, G. K.,	*San Luis Obispo*	24
Dunlap, A. K.,	*Sacramento*	18
Dunlop, J.,	*Pasadena*	9
Dunn, R. H.,	*San Francisco*	22
Dunne, N. P.,	*Oakland*	1
Dunphy, J. M.,	*Santa Cruz*	28
Dunsmoor, N. C.,	*Los Angeles*	9
Dupuich, L. R.,	*Oakland*	1
Durgin, R. M.,	*Berkeley*	1
Durr, S. A.,	*San Diego*	21
Dutton, M. L.,	*San Francisco*	22
Duvall, E. M.,	*Long Beach*	9
Dye, W. G.,	*Los Angeles*	9
Dyke, L. H.,	*Oakland*	1
Dykes, H. R.,	*Taft*	7
Dyment, B. S.,	*Stanford University*	27
Dysart, B. R.,	*Pasadena*	9

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NAME	CITY	COUNTY SOCIETY NO.
Eager, B. F.,	*San Diego*	21
Eakin, M. A.,	*San Francisco*	22
Earel, E. F.,	*Santa Ana*	15
Earl, H., D.,	*San Pedro*	9
Earle, L. M.,	*Los Angeles*	9
Early, C. E.,	*Los Angeles*	9
Earwood, E. R.,	*Los Angeles*	9
Eastman, W. R.,	*La Jolla*	21
Easton, D. E. F.,	*San Francisco*	22
Eaton, G. L.,	*San Francisco*	22
Eaton, H. D.,	*Los Angeles*	9
Eaton, J. L.,	*Berkeley*	1
Eaton, W. H.,	*Santa Barbara*	26
Eaves, J.,	*Oakland*	1
Eberhardt, G.,	*Gonzales*	13
Ebright, G. E.,	*San Francisco*	22
Eckerle, W. J.,	*Wilmington*	9
Eddy, I. H.,	*Glendale*	9
Eder, H. L.,	*Santa Barbara*	26
Eder, L. F.,	*Santa Barbara*	26
Edgerton, A. E.,	*San Francisco*	22
Edler, W.,	*Pasadena*	9
Edmonds, F. W.,	*Oakland*	1
Edmundson, J. D.,	*Orland*	38
Fay, J.,	*San Francisco*	22
Edson, P. J.,	*Pasadena*	9
Edward, J. T.,	*Pasadena*	9
Edwards, F. A.,	*Los Angeles*	9
Edwards, H. W.,	*Los Angeles*	9
Edwards, J. C.,	*Berkeley*	1
Edwards, M. E.,	*San Francisco*	22
Edwards, W. M.,	*Portola*	8
Ehlers, E. C.,	*Loma Linda*	20
Ehlers, H.,	*Fowler*	4
Ehrke, A. A.,	*Compton*	9
Eidenmuller, W. C., Jr.,	*San Francisco*	22
Eiler, J. O.,	*Long Beach*	9
Eisen, E. G.,	*Los Angeles*	9
Eiskamp, E. H.,	*Watsonville*	28
Eklund, O. E.,	*San Francisco*	22
Eldredge, S.,	*Crockett*	3
Elkins, D. L.,	*Long Beach*	9
Ellefson, O. D.,	*Hughson*	33
Elliot, A. H., Jr.,	*Santa Barbara*	26
Elliott, A. E.,	*San Diego*	21
Elliott, A. L.,	*Berkeley*	1
Elliott, F. P.,	*San Diego*	21
Ellis, E. D.,	*Altadena*	9
Ellis, G.,	*Berkeley*	1
Ellis, H. O.,	*Chico*	2
Ellis, J. A.,	*Alameda*	1
Ellis, L. T.,	*Los Angeles*	9
Ellis, W. L.,	*Boulder Creek*	28
Ellsworth, A. B.,	*Long Beach*	9
Ellwood, P. M.,	*Oakland*	1
Eloesser, L.,	*San Francisco*	22
Ely, L. W.,	*San Francisco*	27
Emerson, M. L.,	*Oakland*	1
Emery, C. E.,	*San Francisco*	22
Emery, C. K.,	*Los Angeles*	9
Emge, L. A.,	*San Francisco*	22
Emmons, C. L.,	*Ontario*	20
Empey, L. W.,	*Roseville*	16
Emrick, E. L.,	*Stockton*	23
Ende, F. M.,	*Hollywood*	9
Endres, W. J.,	*Los Angeles*	9
Engel, E. E.,	*San Bernardino*	20
Engle, H. M.,	*San Francisco*	22
English, C. F.,	*Stockton*	23
English, G. G.,	*Hollywood*	9
Enloe, N. T.,	*Chico*	2
Enos, J. B.,	*Oakland*	1
Enos, M. M.,	*Oakland*	1
Epsteen, A.,	*San Francisco*	22
Epstein, N. N.,	*San Francisco*	22
Erkenbeck, J. W.,	*San Diego*	21
Erlanger, V. J.,	*San Diego*	21
Ernsberger, G. H.,	*Covina*	9
Esnard, R. P.,	*Los Angeles*	9
Etter, O. R.,	*Oakland*	1
Eusden, R. B.,	*Long Beach*	9
Evans, H. R.,	*Los Angeles*	20
Evans, J. H.,	*Highland*	20
Evans, N. G.,	*S. Pasadena*	9
Evans, R. D.,	*Santa Barbara*	26
Eveleth, R. H.,	*Roseville*	16
Everingham, S.,	*Oakland*	1
Ewens, F.,	*Long Beach*	9
Ewer, E. N.,	*Oakland*	1
Ewer, J. N.,	*Oakland*	1
Ewing, F.,	*Oakland*	1
Exelby, P. B.,	*Los Angeles*	9
Eymundson, K. S.,	*San Francisco*	22
Eytinge, E. J.,	*Redlands*	20

— F —

NAME	CITY	COUNTY SOCIETY NO.
Faber, H. K.,	*San Francisco*	22
Fabian, J. P.,	*Chico*	18
Facey, F. D.,	*San Fernando*	9
Fagan, S. F.,	*Los Angeles*	9
Fagerstrom, D. P.,	*San Jose*	27
Fairchild, C. H.,	*Woodland*	38
Fairchild, F. R.,	*Woodland*	38
Fairchild, L. H.,	*Carlsbad*	21
Falconer, E. H.,	*San Francisco*	22
Falconer, F. H.,	*Los Angeles*	9
Falconer, R. A.,	*Los Angeles*	9
Falk, C. C.,	*Eureka*	5
Falk, C. C., Jr.,	*Eureka*	5
Falk, C. L.,	*Eureka*	5
Falk, E. V.,	*Modesto*	33
Fallas, R. E.,	*Los Angeles*	9
Fanning, J. L.,	*Sacramento*	18
Fanson, E.,	*Pasadena*	9
Faris, H. S.,	*Riverside*	17
Farman, G. F.,	*Los Angeles*	9
Farmer, J. L.,	*San Diego*	21
Farmer, L. E.,	*Folsom City*	18
Farnham, R. M.,	*Glendale*	9
Farnsworth, T. K.,	*Los Angeles*	9
Farr, W. H.,	*Salinas*	13
Farrage, J.,	*Santa Ana*	15
Farrell, J. W.,	*Los Angeles*	9
Farrell, L. W.,	*Sacramento*	18
Fate, W. A.,	*Los Angeles*	9
Faulkner, J. L.,	*Red Bluff*	34
Faulkner, W. B., Jr.,	*San Francisco*	22
Fay, J.,	*San Francisco*	22
Fearn, J. R.,	*Oakland*	1
Fearon, W. M.,	*Los Angeles*	9
Feeley, M. A.,	*San Francisco*	22
Fehliman, W. E.,	*Santa Cruz*	28
Fehrensen, G.,	*Inglewood*	9
Feinberg, H.,	*San Francisco*	22
Feingold, B. F.,	*Los Angeles*	9
Felberbaum, W.,	*Santa Paula*	37
Feldman, C.,	*Maywood*	9
Felger, L.,	*Los Angeles*	9
Felsenthal, L.,	*Los Angeles*	9
Fenton, W. W.,	*San Bernardino*	20
Ferguson, C. J.,	*Los Angeles*	9
Fernandez, M. L.,	*Pinole*	3
Fernish, C. A.,	*Santa Clara*	27
Ferrante, A. A.,	*San Francisco*	22
Ferrier, P. A.,	*Pasadena*	9
Ferry, F. C.,	*Los Angeles*	9
Fetter, E. M.,	*San Diego*	21
Fibush, A.,	*San Francisco*	22
Fiegel, F. X.,	*San Bernardino*	20
Field, A. M.,	*Patterson*	33
Fielder, R. L.,	*San Francisco*	22
Fielding, G. A.,	*Brentwood Heights*	9
Fieseler, W. R.,	*Los Angeles*	9
Filipello, E. A.,	*San Jose*	27
Fillmore, J. R.,	*Strathmore*	35
Finan, A. P.,	*Suisun*	31
Finch, W. C.,	*Los Angeles*	9
Findlay, H. V.,	*Santa Barbara*	26
Findley, F. M.,	*Santa Ana*	15
Fine, I. A.,	*Los Angeles*	9
Finkelberg, I. L.,	*San Bernardino*	20
Finnerty, E. J.,	*Sonoma*	32
Finsand, V.,	*San Francisco*	22
Firestone, F.,	*San Francisco*	22
Fischer, S. S.,	*Oakland*	1
Fish, E. S.,	*Los Angeles*	9
Fish, L. W.,	*Los Angeles*	9
Fishbaugh, E. C.,	*Los Angeles*	9
Fisher, A. L.,	*San Francisco*	22
Fisher, C.,	*Los Angeles*	9
Fisher, C. A.,	*Los Angeles*	9
Fisher, R. H.,	*Oakland*	1
Fisher, R. E.,	*Pomona*	9
Fisher, V. L.,	*Long Beach*	9
Fisher, W. L.,	*Pomona*	9
Fist, H. S.,	*Los Angeles*	9
Fitzgerald, J. J.,	*Richmond*	34
Fitzgerald, W. W.,	*Stockton*	23
Fitzgibbon, C. C.,	*Merced Falls*	12
Fitzpatriek, E. B.,	*Martinez*	3
Flamson, R. J.,	*Los Angeles*	9
Flatley, M.,	*Weimar*	16
Fleissner, C. M.,	*Santa Rosa*	32
Fleming, E. W.,	*Los Angeles*	9
Fleming, H. W.,	*San Francisco*	22
Fleming, L. P.,	*Sanger*	4
Fleming, S.,	*Eureka*	5
Flesher, R. E.,	*Gardena*	9
Fletcher, C. D.,	*San Francisco*	22
Fletcher, H. A.,	*San Francisco*	22
Fletcher, R.,	*San Francisco*	22
Flewelling, L. M.,	*Glendale*	9
Flitcroft, L. M. I.,	*Sacramento*	18
Floersheim, S.,	*Los Angeles*	9
Flood, R. G.,	*San Francisco*	22
Floreth, O. P.,	*Dixon*	31
Flower, K. C.,	*Venice*	9
Fluhmann, C. F.,	*San Francisco*	22
Flynn, V. P.,	*Oakland*	1
Foard, F. T.,	*Charleston, W. Va.*	26
Fogg, E. S.,	*Wasco*	7
Folkenberg, A. W.,	*Los Angeles*	9
Folkins, F. H.,	*Redlands*	20
Folte, A. G.,	*San Francisco*	22
Foord, A. G.,	*Pasadena*	9
Foote, F. S.,	*San Francisco*	22
Forbes, H. J.,	*Pasadena*	9
Forcade, W. P.,	*Corona*	17
Ford, H. G.,	*Richmond*	3
Foree, L.,	*Oakland*	1
Fornoff, H. S.,	*Oakland*	1
Forsythe, J. S.,	*San Bernardino*	20
Fortier, R. M.,	*Salinas*	13
Fortson, G. R.,	*Susanville*	8
Foshay, A. W.,	*Oakland*	1
Foster, A. H.,	*Brawley*	6
Foster, C. A.,	*Los Angeles*	9
Foster, E. C.,	*Hanford*	36
Foster, H. E.,	*Berkeley*	1
Foster, P. A.,	*Los Angeles*	9
Foulks, C. A.,	*Long Beach*	9

NAME	CITY	COUNTY SOCIETY NO.
Fountain, E. R.,	*Merced*	12
Fowler, C. B.,	*Oakland*	1
Fowler, D. C.,	*Exeter*	35
Fowler, G. W. J.,	*Santa Clara*	27
Fowler, H. L.,	*Los Angeles*	9
Fox, C. M.,	*San Diego*	21
Fox, D. S.,	*Berkeley*	1
Fox, H. W.,	*Tulare*	35
Fox, L. H.,	*Bakersfield*	7
Frame, P. W.,	*Elk Grove*	18
Francis, R. T.,	*Oxnard*	37
Francis, R. K.,	*Inglewood*	9
Francis, V. C.,	*Long Beach*	9
Francis, W. V. C.,	*Los Angeles*	9
Francoz, M. A.,	*San Francisco*	22
Frandy, M. F.,	*Oakland*	1
Franklin, W. S.,	*Santa Barbara*	26
Fraser, H. E.,	*San Francisco*	22
Fraser, L. H.,	*Richmond*	3
Frawley, J. M.,	*Fresno*	4
Frederickson, H.,	*Eldridge*	32
Frees, B. M.,	*Los Angeles*	9
Fregeau, A. N.,	*San Francisco*	22
Freidell, H. F.,	*Santa Barbara*	26
French, C. E.,	*San Francisco*	22
French, J. R.,	*Los Angeles*	9
Freudenthal, L.,	*Gridley*	2
Frey, B. A.,	*Los Angeles*	9
Frey, R. G.,	*Red Bluff*	34
Frey, W. C.,	*San Francisco*	22
Freyermuth, O. G.,	*San Francisco*	22
Freytag, C. F.,	*Los Angeles*	9
Frick, D. J.,	*Los Angeles*	9
Fricke, A. A.,	*Los Angeles*	9
Friedberger, W.,	*Stockton*	23
Friedman, A.,	*San Francisco*	25
Friedman, J. C.,	*Banning*	17
Friedman, M.,	*Los Angeles*	9
Friesen, H. J.,	*Glendale*	9
Frisch, A.,	*Los Angeles*	9
Fritschen, W.,	*San Francisco*	22
Frizzell, R. R.,	*Pasadena*	9
Froehlich, D. E.,	*Oakland*	1
Frohman, B. S.,	*San Francisco*	22
Frost, E.,	*Stockton*	23
Frost, K. P.,	*Los Angeles*	9
Frug, J.,	*Oakland*	1
Fry, P. B.,	*Benicia*	31
Fuller, R. N.,	*Tulare*	35
Furbush, C. G.,	*Oakland*	1
Furlong, R. M.,	*San Francisco*	10
Furness, G. B.,	*Visalia*	35
Furstman, J. M.,	*Monrovia*	9
Futch, C. E.,	*Los Angeles*	9

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NAME	CITY	COUNTY SOCIETY NO.
Gafford, J. A.,	*Huntington Park*	9
Gage, A. E.,	*Los Angeles*	9
Gage, A. T.,	*Redlands*	20
Gage, C. E.,	*Los Angeles*	9
Gageby, L. H.,	*Los Angeles*	9
Gagnon, A. L.,	*San Diego*	21
Gailmard, C. R.,	*Los Angeles*	9
Galbraith, A.,	*Oakland*	1
Galbraith, F. B.,	*Alameda*	1
Galbraith, G. H.,	*Long Beach*	9
Gale, W. V.,	*Los Angeles*	9
Gallagher, H. F.,	*Los Angeles*	9
Gallant, A. E.,	*Los Angeles*	9
Gallant, P. A.,	*Huntington Park*	9
Gallegos, P. B.,	*Stockton*	23
Galligan, C. A.,	*Monterey*	13
Galloway, C. E.,	*Hollywood*	9
Gallwey, J.,	*San Francisco*	22
Gans, C. H.,	*Long Beach*	9
Garceclon, H.,	*Arrowhead Springs*	20
Garcia, L. C.,	*San Francisco*	22
Gardner, C. S.,	*Oakland*	1
Gardner, F. W.,	*Loma Linda*	20
Gardner, F. M.,	*San Bernardino*	20
Gardner, H. L.,	*San Francisco*	22
Gardner, W. E.,	*Riverside*	17
Gardner, W. M.,	*Los Angeles*	9
Garfinkle, F. E.,	*San Francisco*	22
Garland, L. H.,	*San Francisco*	22
Garner, G. W.,	*Taft*	7
Garnett, A. S.,	*San Bernardino*	20
Garrett, F. H.,	*Patton*	20
Garrison, B. E.,	*Riverside*	17
Garrison, O. H.,	*Oakland*	1
Garstang, D. B.,	*Los Angeles*	9
Garth, W. L.,	*La Jolla*	21
Gaspard, F. J.,	*Los Angeles*	9
Gasteiger, E. S.,	*Los Angeles*	9
Gates, C. Y.,	*San Francisco*	22
Gates, M. G.,	*Ocean Park*	9
Gates, M. J.,	*Santa Cruz*	28
Gatliff, W. W.,	*Butte City*	38
Gattuccio, B.,	*San Jose*	27
Gaulden, C. L.,	*Los Angeles*	9
Gauthier, A. E.,	*San Francisco*	22
Gay, H. M.,	*Pasadena*	9
Geddes, M. A.,	*Santa Ana*	15
Gehrels, E.,	*San Francisco*	22
Gehrels, F.,	*San Mateo*	25
Geiger, J. C.,	*San Francisco*	22
Geisler, W. H.,	*San Jose*	27
Geistweit, W. H., Jr.,	*San Diego*	21
Geith, C. R.,	*Riverside*	17
Gelston, C. F.,	*San Francisco*	22
Gentry, H. G.,	*Redlands*	20
George, A. R.,	*Loma Linda*	20
George, J. M.,	*San Francisco*	22
George, L. H.,	*Loma Linda*	20
George, W. A.,	*Loma Linda*	20
Gerisch, H. H.,	*Los Angeles*	9
Gerlach, F. C.,	*San Jose*	27
Gerlough, R. J.,	*Menlo Park*	25
Germann, A. C.,	*Los Angeles*	9
Gernand, H. C.,	*Los Angeles*	9
Gerrard, C. C.,	*Redding*	29
Gerstle, M., Jr.,	*San Francisco*	22
Geyman, M. J.,	*Santa Barbara*	26
Ghrist, D. G.,	*Los Angeles*	9
Ghrist, D. M.,	*Glendale*	9
Ghrist, O. E.,	*Glendale*	9
Giannini, A. H.,	*Los Angeles*	22
Gibbons, H., III,	*San Francisco*	22
Gibbons, H. W.,	*Sacramento*	18
Gibbons, M. R.,	*San Francisco*	22
Gibbons, M. R., Jr.,	*San Francisco*	22
Gibbs, D. H.,	*Los Angeles*	9
Gibbs, R. S.,	*San Bernardino*	20
Gibbs, W. M.,	*Glendale*	9
Giberson, A. F.,	*San Quentin*	10
Gibson, T. E.,	*San Francisco*	22
Gidley, D. S.,	*Ontario*	20
Gidoll, S. H.,	*San Francisco*	22
Gifford, M. A.,	*San Francisco*	22
Gilbert, J. S.,	*Los Angeles*	9
Gilbert, Q. O.,	*Oakland*	1
Gilbert, R.,	*San Francisco*	22
Gilbert, W. H.,	*Los Angeles*	9
Gilcreest, E. L.,	*San Francisco*	22
Giles, F. E.,	*Los Angeles*	9
Gilkey, W. D.,	*Long Beach*	9
Gillespie, P. B.,	*Santa Ana*	15
Gillespie, S. T.,	*La Jolla*	21
Gilliatt, W. H.,	*Coalinga*	4
Gillihan, A. F.,	*San Luis Obispo*	24
Gilliland, M. L.,	*Los Angeles*	9
Gillis, J. P.,	*Los Angeles*	9
Gillis, J. D.,	*Los Angeles*	9
Gilman, A. A.,	*San Francisco*	22
Gilman, P. K.,	*San Francisco*	22
Ginsburg, H. M.,	*Fresno*	4
Ginsburg, S. S.,	*Visalia*	35
Girard, F. R.,	*San Francisco*	22
Girdlestone, C. W.,	*Riverside*	17
Gius, E. A.,	*San Francisco*	22
Glascock, F. L.,	*Los Angeles*	9
Glaser, E. F.,	*San Francisco*	22
Glaser, M. A.,	*Los Angeles*	9
Glass, K. W.,	*Venice*	9
Glass, S. J.,	*Los Angeles*	9
Glassman, S. C.,	*Los Angeles*	9
Gleason, A. L.,	*Oakland*	1
Gleeten, S. D.,	*Monrovia*	9
Glenn, R. A.,	*Oakland*	1
Glenn, T. H.,	*Los Angeles*	9
Glyer, R. T.,	*Mountain View*	27
Gobar, F. H.,	*Fullerton*	15
Gocher, T. E. P.,	*Fairfax*	10
Goddard, W. P.,	*Mill Valley*	10
Godshall, L. D.,	*Los Angeles*	9
Godwin, D. E.,	*Long Beach*	9
Goeckerman, W. H.,	*Los Angeles*	9
Goin, L. S.,	*Los Angeles*	9
Goldberg, A. T.,	*Fresno*	4
Goldberg, M. B.,	*San Francisco*	22
Goldberg, P. H.,	*Los Angeles*	9
Goldberg, S. S.,	*Los Angeles*	9
Goldberg, V.,	*Long Beach*	9
Golden, J. H.,	*San Francisco*	22
Golding, D. G.,	*Santa Monica*	9
Goldman, T. H.,	*Los Angeles*	9
Goldman, V. S.,	*San Francisco*	22
Goldstein, J.,	*Los Angeles*	9
Goldwasser, M.,	*Los Angeles*	9
Gomes, J. J.,	*Oakland*	1
Gompertz, K. R.,	*Berkeley*	1
Gonzales, F. L. A.,	*San Francisco*	22
Goodall, O. P.,	*Bakersfield*	7
Goodman, M.,	*Stockton*	23
Gordon, K. W.,	*Los Angeles*	9
Gorham, C. B.,	*Monterey*	13
Gosney, C. W.,	*Hollywood*	9
Gossage, H. S.,	*Petaluma*	32
Gossard, J. E.,	*Sierra Madre*	9
Gottlieb, A.,	*Los Angeles*	9
Gottschalk, A.,	*San Francisco*	22
Gough, A. S.,	*El Segundo*	9
Gould, N. B.,	*Modesto*	33
Gourley, I.,	*Livermore*	1
Gowan, C. H.,	*Glendale*	9
Graeser, H. B.,	*Holtville*	6
Graham, H. B.,	*San Francisco*	22
Graham, H. K.,	*San Diego*	21
Graham, J. A.,	*Barstow*	20
Graham, J. P.,	*Los Angeles*	9
Graham, L.,	*Newberry*	20
Graham, R. S.,	*Sacramento*	18
Graham, R. E.,	*Oakland*	1
Grandstaff, F. L.,	*Preble, Ind.*	26
Granger, A. S.,	*Los Angeles*	9
Grant, B. E., Jr.,	*Glendale*	9
Grant, R. F.,	*San Francisco*	22
Gratiot, W. M.,	*Monterey*	13
Grau, E. C.,	*Niles*	1
Graun, R. E.,	*Los Gatos*	27
Graves, J. H.,	*San Francisco*	22
Graves, J. M.,	*San Francisco*	22
Graves, R. V.,	*Fullerton*	15
Gray, E. H.,	*Woodland*	38
Gray, E.,	*Los Angeles*	9
Gray, E. E.,	*Marysville*	39
Gray, G. A.,	*San Jose*	27
Gray, G. H.,	*Oakland*	1
Gray, H.,	*San Francisco*	22
Gray, J. P.,	*San Francisco*	22
Gray, J. R.,	*Carmel*	13
Gray, P. A., Jr.,	*Santa Barbara*	26
Gray, R. N.,	*Hartford, Conn.*	22
Gray, R. M.,	*Indio*	17
Graybill, M. B.,	*Escondido*	21
Green, A. S.,	*San Francisco*	22
Green, B., Jr.,	*Riverside*	17
Green, D. M.,	*Los Angeles*	9
Green, H. R.,	*Palo Alto*	27
Green, J. W.,	*Vallejo*	31
Green, L. D.,	*San Francisco*	22
Green, M. I.,	*San Francisco*	22
Green, R. C.,	*Fullerton*	15
Greengo, C. G.,	*Los Angeles*	9
Greenwood, C. F.,	*Oakland*	1
Greenwood, E. N.,	*San Francisco*	22
Greer, E. D.,	*Oakland*	1
Gregg, F. C.,	*Calexico*	6
Gregg, H. J.,	*Calexico*	6
Gregory, C. A.,	*Sanitarium*	14
Gregory, F. S.,	*Redwood City*	25
Gregory, H. L.,	*Stockton*	23
Gregory, L. C.,	*Pittsburg*	3
Gregory, W. A.,	*Oakland*	1
Grey, C. A.,	*Burbank*	9
Grieg, T. O.,	*Berkeley*	1
Griffin, C. F.,	*San Francisco*	22
Griffin, W. L.,	*Los Angeles*	9
Griffith, A. H.,	*Oakland*	1
Griggs, D. E.,	*Los Angeles*	9
Grimmer, E. M.,	*Irvington*	1
Griner, E. C.,	*Stockton*	23
Grishaw, W. H.,	*Los Angeles*	9
Groat, M. J.,	*Los Angeles*	9
Grodsky, L. I.,	*San Francisco*	22
Grogan, R. E.,	*Los Angeles*	9
Groper, M. J.,	*San Francisco*	22
Gross, H. G.	*Eureka*	5
Grosse, A. B.,	*San Francisco*	22
Grow, L. W.,	*San Diego*	21
Grundy, G. M.,	*Newport Beach*	15
Guedel, A. E.,	*Beverly Hills*	9
Guenther, L. P.,	*Los Angeles*	9
Guerra, A. L.,	*Alameda*	1
Guidinger, W. E.,	*San Pedro*	9
Guido, F. R.,	*Visalia*	35
Guinan, E. R.,	*Richmond*	3
Gummess, K. C.,	*Los Angeles*	9
Gummig, E. A.,	*Pasadena*	9
Gumpert, M. W.,	*Los Angeles*	9
Gunderson, H. J.,	*Los Angeles*	9
Gundrum, F. F.,	*Sacramento*	18
Gundrum, L. K.,	*Los Angeles*	9
Gundrum, W. H.,	*Owensmouth*	9
Gundry, F. J.,	*Bakersfield*	7
Gunn, F. G.,	*Kelseyville*	14
Gunther, L.,	*Los Angeles*	9
Gustafson, A. W.,	*Gustine*	12
Gustafson, R. K.,	*Pasadena*	9

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NAME	CITY	COUNTY SOCIETY NO.
Haas, S. L.,	*San Francisco*	22
Haber, W. J.,	*San Francisco*	22
Hablutzel, C. E.,	*San Jose*	27
Hadden, D.,	*Oakland*	1
Haddow, N. W.,	*Los Angeles*	9
Hadley, C. M.,	*Redlands*	20
Haenszel, A. L.,	*San Bernardino*	20
Hagedorn, E. F.,	*Modesto*	33
Hagen, H.,	*San Luis Obispo*	24
Hager, B. H.,	*Los Angeles*	9
Hahn, L. W.,	*Berkeley*	1
Haig, T. R.,	*Sacramento*	18
Haight, F. K.,	*Oakland*	1
Haight, L. M.,	*Stockton*	23
Haines, C. L.,	*Altadena*	9
Haines, W. H.,	*Etna*	30
Haining, R. B.,	*Los Angeles*	9
Hainsworth, E. L.,	*Ventura*	37

NAME	CITY	COUNTY SOCIETY NO.
Halburg, C. T.,	*Burbank*	9
Haldeman, K. O.,	*San Francisco*	22
Hale, N. G.,	*Sacramento*	18
Haley, P. S.,	*San Jose*	27
Hall, C.,	*Oakland*	1
Hall, C.,	*Los Angeles*	9
Hall, C. C.,	*Oakland*	1
Hall, E. H.,	*Vernon*	9
Hall, E. M.,	*Los Angeles*	9
Hall, G. E.,	*Palo Alto*	27
Hall, G. J.,	*Sacramento*	18
Hall, G. P.,	*San Jose*	27
Hall, G. S.,	*Los Angeles*	9
Hall, J. H.,	*Sacramento*	18
Hall, R. C.,	*San Diego*	21
Hall, T. G.,	*San Francisco*	22
Halley, E. C.,	*Sanger*	4
Halloran, C. R.,	*Los Angeles*	9
Halverson, W. L.,	*Los Angeles*	9
Hambleton, H. G.,	*Los Angeles*	9
Hambleton, M. P.,	*Fontana*	20
Hambo, C. C.,	*Riverside*	17
Hamer, C.,	*Glendale*	9
Hamilton, J. K., Jr.,	*Alameda*	1
Hamilton, J. R.,	*Los Angeles*	9
Hamilton, R. L.,	*Marysville*	39
Hamilton, P. L.,	*Chico*	2
Hamlin, O. D.,	*Oakland*	1
Hamlin, R. E.,	*Santa Rosa*	32
Hammack, R. W.,	*Los Angeles*	9
Hammond, N. E.,	*Los Angeles*	9
Hand, F. B.,	*San Francisco*	22
Hand, L. J.,	*San Francisco*	22
Hanford, F. W.,	*Los Angeles*	9
Hanley, B. J.,	*Los Angeles*	9
Hanlon, E. W.,	*San Francisco*	22
Hanlon, H. H.,	*Los Angeles*	9
Hannah, W.,	*Long Beach*	9
Hanner, J. W.,	*Burlingame*	25
Hansen, A. M.,	*Los Angeles*	9
Hansen, O. J.,	*Redding*	29
Hanson, S.,	*Stockton*	23
Hanze, H. G.,	*Solvang*	26
Hanzlik, P. J.,	*San Francisco*	25
Happ, W. M.,	*Los Angeles*	9
Hara, H. J.,	*Los Angeles*	9
Hara, M. F.,	*Los Angeles*	9
Harada, M. A.,	*Sacramento*	18
Harbaugh, O. S.,	*San Diego*	21
Harbaugh, R. W.,	*San Francisco*	22
Harbeck, C. J.,	*Los Angeles*	9
Harbert, E.,	*Stockton*	23
Harder, W. R.,	*Los Gatos*	27
Hardgrave, L. E.,	*San Francisco*	22
Harding, G. F.,	*Santa Monica*	9
Harding, H. W.,	*Oakland*	1
Harding, L. W.,	*Los Angeles*	9
Harding, M. C.,	*San Diego*	21
Harding-Mason, J.,	*San Francisco*	22
Hardy, B. W.,	*Huntington Beach*	15
Hare, G. A.,	*Fresno*	4
Hare, H. P.,	*Los Angeles*	9
Hare, M. M.,	*Glendale*	9
Hare, R. A.,	*Santa Barbara*	26
Harmon, E. D.,	*San Francisco*	22
Harner, C. E.,	*Long Beach*	9
Harner, H. R.,	*Los Angeles*	9
Harper, T. C.,	*San Quentin*	10
Harr, R. V.,	*Eldridge*	32
Harrington, D. O.,	*San Francisco*	22
Harrington, J. T.,	*Santa Cruz*	28
Harris, E. L.,	*Oakland*	1
Harris, F. I.,	*San Francisco*	22
Harris, J. M.,	*Los Angeles*	9
Harris, J. B.,	*Sacramento*	18
Harris, M. S.,	*Los Angeles*	9
Harris, M. W.,	*Novato*	10
Harris, R. E.,	*San Francisco*	22
Harris, R. H.,	*Los Angeles*	9
Harris, R. C.,	*Santa Ana*	15
Harrison, E. S.,	*Gridley*	2
Harrison, F.,	*Gridley*	2
Harrison, W. J.,	*Alhambra*	9
Harrop, L. L.,	*Los Angeles*	9
Hart, A. C.,	*Sacramento*	18
Hart, C. D.,	*San Francisco*	22
Hart, M. E.,	*San Mateo*	25
Hart, T. M.,	*Los Angeles*	9
Hart, V. W.,	*Yreka*	30
Hart, W. E.,	*Oakland*	1
Harter, T. H.,	*Pasadena*	9
Hartman, G. J.,	*Pasadena*	9
Hartman, G. W.,	*San Francisco*	22
Hartman, H.,	*Modesto*	33
Hartwell, R. W.,	*Beaumont*	17
Hartwig, L. G.,	*Los Angeles*	9
Harvey, J. E.,	*Pasadena*	9
Harvey, R. J.,	*Anaheim*	15
Harvey, R. W.,	*San Francisco*	22
Harwood, D. A.,	*Santa Ana*	15
Hashiba, G. K.,	*Fresno*	4
Haskell, H. A.,	*Windsor*	32
Haskell, P. F.,	*Artesia*	9
Hastings, H.,	*Los Angeles*	9
Hastings, S. W.,	*Monterey*	13
Hastreiter, R. F.,	*Los Angeles*	9
Hatfield, H. L.,	*Pasadena*	9
Haven, M. N.,	*San Francisco*	22
Hawes, R. E.,	*Huntington Beach*	15
Hawk, C. L.,	*Hollywood*	9
Hawkins, C. L.,	*Taft*	7
Hawkins, G. A.,	*Reedley*	4
Hawkins, G. G.,	*Madera*	4
Hawkins, H. M.,	*Los Angeles*	7
Hawkins, L. P.,	*Los Angeles*	9
Hawley, M. C.,	*Agnew*	27
Haworth, M. W.,	*Sacramento*	18
Hay, E. O.,	*Los Angeles*	9
Hayes, C. M.,	*Los Angeles*	9
Hayes, E. W.,	*Monrovia*	9
Haygood, A. G.,	*Downey*	9
Haynes, F. W.,	*Los Angeles*	9
Haynes, J. R.,	*Los Angeles*	9
Hayton, C. H.,	*Los Angeles*	9
Hazel, J. K.,	*San Francisco*	22
Hazeltine, M. E.,	*San Rafael*	10
Heald, A. H.,	*San Francisco*	22
Heald, E. S.,	*Berkeley*	1
Heard, W. R.,	*Pasadena*	9
Hebert, A. W.,	*San Francisco*	22
Hector, L. L.,	*Berkeley*	1
Hedberg, C. C.,	*San Francisco*	22
Heddens, V. O.,	*Pasadena*	9
Hedges, L. A.,	*Richmond*	3
Heegler, F. D.,	*Napa*	14
Heiges, L. E.,	*Lompoc*	26
Hein, G. E.,	*San Francisco*	22
Heinz, R.,	*Pleasanton*	1
Heissig, I.,	*Los Angeles*	9
Helsley, G. F.,	*San Francisco*	22
Helstrom, G. L.,	*Fontana*	20
Hench, J. M.,	*Stockton*	23
Henderson, A. M.,	*Sacramento*	18
Henderson, H. E.,	*Santa Barbara*	26
Henderson, H. G.,	*San Francisco*	22
Henderson, J. G.,	*San Francisco*	22
Henderson, R. G.,	*Long Beach*	9
Hendricks, F. R.,	*Ventura*	37
Henke, G. B.,	*Ontario*	20
Henning, B. H.,	*San Francisco*	22
Henninger, L. L. R.,	*Pasadena*	9
Henrich, A. G.,	*Los Angeles*	9
Henry, A. W.,	*San Leandro*	1
Henry, M. G.,	*Los Angeles*	9
Hensler, H. N.,	*San Anselmo*	10
Hepplewhite, J. G.,	*Chico*	2
Heppner, G. J.,	*San Francisco*	22
Herman, B. S.,	*San Francisco*	22
Heron, I. C.,	*San Francisco*	22
Herrick, A. B., Jr.,	*Santa Rosa*	32
Herrick, F. L.,	*Livermore*	1
Herring, J. B.,	*San Francisco*	22
Herschner, H. L.,	*Los Angeles*	9
Hershman, F.,	*Los Angeles*	9
Hertzog, F. C.,	*Long Beach*	9
Herzikoff, S. S.,	*Los Angeles*	9
Hess, H. A.,	*San Francisco*	22
Hessel, V. E.,	*Los Angeles*	9
Hethcock, E. E.,	*Los Angeles*	9
Heuler, Leo,	*Fellows*	7
Heuschele, W. H.,	*San Jose*	27
Heylmun, H. H.,	*Long Beach*	9
Hiatt, R. S.,	*Modesto*	33
Hibben, J. S.,	*Pasadena*	9
Hicks, A. M.,	*San Francisco*	22
Hicks, J. R.,	*Tulare*	35
Hieronymus, A.,	*Oakland*	1
Higbee, D. R.,	*San Diego*	21
Higgs, D. W. P.,	*Chula Vista*	21
Hileman, J. E.,	*San Diego*	21
Hilgesen, J.,	*Oakland*	1
Hill, A. L.,	*Los Angeles*	9
Hill, E. W.,	*San Andreas*	23
Hill, E. J.,	*Eureka*	5
Hill, H. P.,	*San Francisco*	22
Hill, H. G.,	*Redlands*	20
Hill, J. C.,	*Brawley*	6
Hill, L. R.,	*Long Beach*	9
Hill, M. R.,	*Los Angeles*	9
Hill, R. C.,	*Exeter*	35
Hill, R. B.,	*Los Angeles*	9
Hill, T. P.,	*Lakeport*	11
Hill, W. B.,	*Long Beach*	9
Hilliard, C. G.,	*Redlands*	20
Hills, C. B.,	*Berkeley*	1
Hillyard, L. V.,	*Los Angeles*	9
Hillyer, L.,	*Los Banos*	12
Hilton, J. J.,	*Los Angeles*	9
Hinckley, H. A.,	*Corcoran*	36
Hines, L. W.,	*Santa Rosa*	32
Hinman, F.,	*San Francisco*	22
Hippach, R. M.,	*Los Angeles*	9
Hirshfeld, S.,	*Los Angeles*	9
Hiscox, E. J.,	*Loma Linda*	20
Hitchcock, H. H.,	*Oakland*	1
Hixson, W. C., Jr.,	*Beverly Hills*	9
Hoag, C. L.,	*San Francisco*	22
Hoag, H. J.,	*San Jose*	27
Hodgdon, F. W., Jr.,	*Pasadena*	9
Hodges, W. A.,	*La Vina*	9
Hodgin, R. I.,	*Ontario*	20
Hodgins, F. W.,	*Oakland*	1
Hodgkin, P.,	*El Centro*	6
Hoffman, A. M.,	*Los Angeles*	9
Hoffman, H. V.,	*San Francisco*	22
Hoffman, L. H.,	*San Francisco*	22
Hoffman, P.,	*Marysville*	39
Hoffman, P. E.,	*San Francisco*	22
Hoffman, R. O.,	*San Diego*	21
Hogg, R. L.,	*Saratoga*	27
Hohl, E. M.,	*Los Angeles*	9
Hoke, P. I.,	*Los Angeles*	9
Holcomb, W. F.,	*Oakland*	1
Holder, H. G.,	*San Diego*	21
Holcman, G. S.,	*Centerville*	1
Holladay, F. S.,	*Los Angeles*	9
Holleran, J. F.,	*Los Angeles*	9
Holleran, G. C.,	*Brawley*	6
Holleran, W. M.,	*Los Angeles*	9
Holley, W. W.,	*Inglewood*	9
Holliger, C. D.,	*Stockton*	23
Hollingsworth, L. D.,	*Los Angeles*	9
Hollingsworth, M. W.,	*Santa Ana*	15
Holm, E.,	*Eureka*	5
Holman, E. F.,	*San Francisco*	22
Holman, W. F.,	*Los Angeles*	9
Holmer, V. C.,	*San Francisco*	22
Holmes, A. J.,	*Pasadena*	9
Holmes, O. M.,	*San Mateo*	25
Holmes, T. B.,	*E. Oakland*	1
Holmson, H.,	*Anaheim*	15
Holt, C. Z.,	*Los Angeles*	9
Holt, R. A., Jr.,	*Los Angeles*	9
Holzman, A. J.,	*Santa Barbara*	26
Holzman, R. R.,	*Los Angeles*	9
Holmbach, F. J.,	*Santa Barbara*	26
Homer, R. W.,	*Ventura*	37
Homman, G. L.,	*Los Angeles*	9
Homme, O. H.,	*Los Angeles*	9
Honor, H. C.,	*Cotati*	32
Hoobler, H. R.,	*Oakland*	1
Hooker, M. O.,	*Santa Barbara*	26
Hoover, E. F.,	*San Diego*	21
Hoover, J. N.,	*Long Beach*	9
Hope, R. B.,	*Los Angeles*	9
Hopkins, E. K.,	*San Francisco*	22
Hopkins, H.,	*Los Angeles*	9
Hopkins, J. W.,	*Glendale*	9
Hopkins, M. F.,	*San Jose*	27
Hopkins, M. A.,	*Sacramento*	18
Hopkirk, C. C.,	*Santa Monica*	9
Horn, C. E.,	*San Francisco*	22
Horner, C. D.,	*San Francisco*	22
Horner, W. D.,	*San Francisco*	22
Horst, W. W.,	*Wilmington*	9
Horton, F. L.,	*Pomona*	9
Hosford, G. N.,	*San Francisco*	22
Hoskins, G.,	*Long Beach*	9
Hosmer, C. M.,	*San Diego*	21
Hosmer, M. N.,	*San Francisco*	22
Houck, G. H.,	*Los Angeles*	9
Hough, R. C.,	*San Diego*	21
Houloose, J.,	*Long Beach*	9
Houseworth, A. L.,	*Los Angeles*	9
Housman, N. S.,	*San Francisco*	22
Houston, A. J.,	*San Francisco*	22
Houzvicka, O. A.,	*San Diego*	21
Hovde, A. G.,	*Los Angeles*	9
Howard, B. F.,	*Sacramento*	18
Howard, C. E.,	*San Diego*	21
Howard, G. R.,	*Bell*	9
Howard, N. J.,	*San Francisco*	22
Howell, A. J.,	*Berkeley*	1
Howitt, H. O.,	*San Rafael*	10
Howson, C. R.,	*Los Angeles*	9
Hoyt, H. S.,	*Pacific Grove*	13
Hoyt, W. F.,	*Berkeley*	1
Hromadka, A. B.,	*Santa Monica*	9
Hubbert, R. H.,	*Pismo Beach*	24
Hubble, J. E.,	*Pomona*	9
Huenergardt, A. G.,	*Los Angeles*	9
Huenergardt, H. A.,	*Berkeley*	1
Huff, G. D.,	*San Diego*	21
Huff, L. J.,	*Los Angeles*	9
Huffman, H. G.,	*Santa Ana*	15
Huffman, L. D.,	*Los Angeles*	9
Huggins, W. L.,	*Los Angeles*	9
Hughes, J. E.,	*Vallejo*	31
Hughes, S. E.,	*Los Angeles*	9
Hull, E. H.,	*San Bernardino*	20
Hull, J. P.,	*Stockton*	23
Hull, L. C.,	*Hollister*	19
Hull, R. L.,	*Hollister*	19
Humber, J. D.,	*San Francisco*	22
Hummel, E. M.,	*Talmage*	11
Humphrey, W. H.,	*Oakland*	1
Humphreys, J. M.,	*Sanger*	4
Hunnicutt, L. G.,	*Pasadena*	9
Hunsberger, H. S.,	*San Francisco*	22
Hunt, R. A.,	*Riverdale*	4
Hunt, V. C.,	*Los Angeles*	9
Hunt, W. A.,	*Fresno*	4
Hunt, W. R.,	*Santa Barbara*	26
Hunter, P. M.,	*Pebble Beach*	13
Hunter, T. V.,	*Hollywood*	9

NAME	CITY	COUNTY SOCIETY NO.
Hunter, W. E.,	*South Gate*	9
Hunter, W. E.,	*Los Angeles*	9
Huntley, A. C.,	*Point Arena*	11
Huntington, H. A.,	*Los Angeles*	9
Hurwitt, S. J.,	*San Francisco*	22
Hurwitz. S. H.,	*San Francisco*	22
Husband, R. D.,	*Modesto*	33
Huston, J. M.,	*Burlingame*	25
Hutchings, R. K.,	*San Francisco*	22
Hutchinson, W. W.,	*Los Angeles*	9
Hutchison, C. W.,	*Los Angeles*	9
Hutton, J. H.,	*Calipatria*	6
Hyde, R. D.,	*Beverly Hills*	9
Hyland, C. M.,	*Los Angeles*	9
Hyman, S.,	*San Francisco*	22

— I —

Ianne, C. L.,	*San Jose*	27
Iki, G. S.,	*Sacramento*	18
Illick, C. R.,	*Santa Paula*	37
Illsley, M. L.,	*Claremont*	9
Imerman, C. P.,	*Hollywood*	9
Imerman, S. W.,	*Hollywood*	9
Imler, H. G.,	*Los Angeles*	9
Ing, C. S.,	*Stockton*	23
Ingalls, A. T.,	*Los Angeles*	9
Ingber, I. S.,	*San Francisco*	22
Ingels, A. E.,	*Oakland*	1
Ingham, R. O.,	*Colton*	20
Ingham, S. D.,	*Los Angeles*	9
Ingram, C. H.,	*Fresno*	4
Inman, M. M.,	*Los Angeles*	9
Inman, T. G.,	*San Francisco*	22
Irish, C. W.,	*Pasadena*	9
Irvine, A. R.,	*Los Angeles*	9
Irvine, R. S.,	*San Francisco*	22
Irwin, J. C.,	*Los Angeles*	9
Irwin, S. V.,	*Oakland*	1
Isaac, J. P.,	*Glendale*	9
Ishikawa, E.,	*Stockton*	23
Isoard, M. C.,	*Sacramento*	18
Ito, P. K.,	*Los Angeles*	9
Ivey, E. D.,	*Oakland*	1

— J —

Jackson, C. R.,	*Costa Mesa*	15
Jackson, E. A.,	*Atwater*	12
Jackson, J. A.,	*Pasadena*	9
Jackson, L. H.,	*W. Los Angeles*	9
Jacobs, A. M.,	*San Francisco*	22
Jacobs, F. E.,	*San Diego*	21
Jacobs, J.,	*Hollywood*	9
Jacobs, J. J.,	*San Francisco*	22
Jacobs, L. C.,	*San Francisco*	22
Jacobs, S. N.,	*San Francisco*	22
Jacobson, H. P.,	*Los Angeles*	9
Jacobson, P. N.,	*Oakland*	1
Jacobus, L. R.,	*Oakland*	1
James, C. A.,	*Fresno*	4
James, C. S.,	*Los Angeles*	9
James, Lloyd,	*Fresno*	4
James, V. M.,	*Glendale*	9
Janes, O. W.,	*Glendale*	9
Jardini, A.,	*Los Angeles*	9
Jean, G. W.,	*Santa Barbara*	26
Jeancon, E. C.,	*Los Angeles*	9
Jeffry, D. E.,	*Oakland*	1
Jelinek, J. J.,	*Los Angeles*	9
Jellinek, E. O.,	*San Francisco*	22
Jelte, S. A.,	*Oakland*	1
Jenkins, B. E.,	*Oakland*	1
Jenkins, H. L.,	*Arcata*	5
Jenkins, R. B.,	*Los Angeles*	9
Jenney, W. C.,	*Vacaville*	31
Jennison, J. E.,	*San Diego*	21
Jensen, O. B.,	*Livermore*	1
Jesberg, S.,	*Los Angeles*	9
Jewel, R. T.,	*Los Angeles*	9
Jewett, R. A.,	*Los Angeles*	9
Johannes, J. C.,	*Santa Cruz*	28
Johansen, E. A.,	*San Francisco*	22
Johnson, A. L.,	*Taft*	7
Johnson, C. A.,	*Napa*	14
Johnson, C. G.,	*Long Beach*	9
Johnson, C. F.,	*Oakland*	1
Johnson, C. A.,	*Los Angeles*	9
Johnson, C. E.,	*Long Beach*	9
Johnson, C. M.,	*San Francisco*	22
Johnson, C. R.,	*Whittier*	9
Johnson, D. D.,	*Grass Valley*	16
Johnson, E. E.,	*Palo Alto*	27
Johnson, E. D. L.,	*Alhambra*	9
Johnson, F. T.,	*Los Angeles*	9
Johnson, G. M.,	*Los Angeles*	9
Johnson, G. S.,	*San Francisco*	22
Johnson, H. A.,	*Glendale*	9
Johnson, H. H.,	*San Francisco*	22
Johnson, H. R.,	*Sacramento*	18
Johnson, H. S.,	*Long Beach*	9
Johnson, L. C.,	*Salinas*	13
Johnson, L. R.,	*Los Gatos*	23
Johnson, M.,	*Los Angeles*	9
Johnson, M. L.,	*Oakland*	1
Johnson, N. P.,	*Stockton*	23
Johnson, O. D.,	*Los Angeles*	9
Johnson, O. F.,	*Sacramento*	18
Johnson, R. H.,	*Los Angeles*	9
Johnson, R. L.,	*Corona*	17
Johnson, R. W.,	*San Fernando*	9
Johnson, W. B.,	*Chico*	2
Johnson, W. E.,	*Santa Barbara*	26
Johnston, E. J.,	*South Pasadena*	9
Johnston, F. R.,	*Oakland*	1
Johnston, H. A.,	*Anaheim*	15
Johnston, J.,	*Los Angeles*	9
Johnston, S. T.,	*Santa Ana*	15
Johnston, W. H.,	*Santa Barbara*	26
Johnstone, E. M.,	*Pasadena*	9
Johnstone, G. A.,	*Glendale*	9
Johnstone, W. A.,	*Hanford*	36
Jones, C. B.,	*Sacramento*	18
Jones, C. P.,	*Grass Valley*	16
Jones, C. R.,	*San Diego*	21
Jones, C. W.,	*Hollywood*	9
Jones, E. F.,	*Oakland*	1
Jones, E. W.,	*Los Angeles*	9
Jones, G. W.,	*Los Angeles*	9
Jones, G. F.,	*San Francisco*	22
Jones, H. W.,	*Pasadena*	33
Jones, H. T.,	*Los Angeles*	9
Jones, I. H.,	*Los Angeles*	9
Jones, I. W.,	*Los Angeles*	9
Jones, J. R.,	*Sacramento*	18
Jones, J. P.,	*Los Angeles*	9
Jones, J. W.,	*San Francisco*	22
Jones, K. P.,	*Olive View*	9
Jones, L. E.,	*Roseville*	16
Jones, O. C.,	*Santa Maria*	26
Jones, O. W.,	*San Anselmo*	10
Jones, O. W., Jr.,	*San Francisco*	22
Jones, R. B.,	*San Francisco*	22
Jones, R. A.,	*San Francisco*	22
Jones, R. M.,	*Bakersfield*	7
Jones, W. H.,	*Long Beach*	9
Jones, W. H. G.,	*Los Gatos*	27
Jones, W. A.,	*Arlington*	17
Jones, Z. G.,	*Long Beach*	9
Jordan, P. A.,	*San Jose*	27
Jorgenson, N.,	*Fresno*	4
Jorgenson, S. N.,	*San Francisco*	22
Josephs, I. L.,	*Los Angeles*	9
Josephs, L.,	*Los Angeles*	9
Josephson, J. B.,	*San Jose*	27
Joyce, T. F.,	*Spadra*	9
Judd, G. E.,	*Los Angeles*	9
Judson, H. A.,	*Santa Monica*	9
Juenemann, G. F.,	*Los Angeles*	9
Julien, A. E.,	*Turlock*	33
Jumblatt, A.,	*Pacific Beach*	21

— K —

Kaelber, A. P.,	*San Francisco*	22
Kaffesieder, L. I.,	*Los Angeles*	9
Kaftan, L. L.,	*Los Angeles*	9
Kahl, C. W.,	*Merced*	12
Kahn, J.,	*Los Angeles*	9
Kahn, M. G.,	*Los Angeles*	9
Kalfus, J. L.,	*Santa Maria*	26
Kalichman, G. S.,	*Santa Monica*	9
Kane, L. M.,	*Los Angeles*	9
Kanner, H. M.,	*Sacramento*	18
Kaplan, H. E.,	*Stockton*	23
Kaplan, M.,	*Los Angeles*	9
Kapp, M. W.,	*San Jose*	27
Kapp, R. W.,	*San Jose*	27
Kaps, F. O.,	*Santa Ana*	15
Karras, R. W.,	*Sawtelle*	9
Karshner, R. G.,	*Los Angeles*	9
Katz, B.,	*Los Angeles*	9
Kaufman, B.,	*San Francisco*	22
Kavanagh, M. F.,	*San Francisco*	22
Kavinoky, N. R.,	*Los Angeles*	9
Kay, G. L.,	*Redding*	29
Kay, M. M.,	*Shafter*	7
Kay, W. E., Jr.,	*San Francisco*	22
Kaysen, R.,	*San Diego*	21
Kearney, P. A.,	*San Francisco*	22
Kearney, W. B.,	*San Francisco*	22
Keating, V. J.,	*Los Angeles*	9
Keeler, N. S.,	*Oakland*	1
Keenan, A. S.,	*San Francisco*	22
Keeney, M. J.,	*Los Angeles*	9
Kehoe, E. J.,	*San Mateo*	25
Kehr, E. F.,	*Carmel*	13
Keiper, G. F.,	*Los Angeles*	9
Keith, C. F.,	*Williams*	38
Kelker, G. D.,	*San Luis Obispo*	24
Kell, F. B.,	*San Bernardino*	20
Keller, N. F.,	*Los Angeles*	9
Keller, S. H.,	*Riverside*	17
Kelley, G. A.,	*Bridgeport*	4
Kelley, J. W.,	*Los Angeles*	9
Kellogg, E. C.,	*Los Angeles*	9
Kellogg, W. H.,	*Berkeley*	1
Kelly, A. L.,	*Oceanside*	21
Kelly, E. E.,	*Pomona*	9
Kelly, F. L.,	*Berkeley*	1
Kelly, T. H.,	*San Francisco*	22
Kelsey, T. W.,	*Sacramento*	18
Kelso, R. W.,	*Long Beach*	9
Kemper, C. A. S.,	*Escondido*	21
Kendall, O. J.,	*San Diego*	21
Kennedy, C. R.,	*San Luis Obispo*	24
Kennedy, K. E.,	*Oakland*	1
Kennell, L. A.,	*San Diego*	21
Kennicott, R. H.,	*Los Angeles*	9
Kent, K. M.,	*Berkeley*	1
Kergan, H. S.,	*Oakland*	1
Kerlan, M.,	*Beverly Hills*	9
Kern, B. C.,	*Jackson*	18
Kerns, C. L.,	*Pittsburg*	3
Kerr, W. J.,	*San Francisco*	22
Kersten, E. H. W.,	*Anaheim*	15
Kersten, H. M.,	*Los Angeles*	9
Keser, M. D.,	*Richmond*	3
Kessler, E. E.,	*Los Angeles*	9
Key, W. A.,	*San Francisco*	22
Keyes, H. R.,	*Los Angeles*	9
Kibbe, M. E.,	*Oakland*	1
Kibby, S. V.,	*Los Angeles*	9
Kidder, F. W. K.,	*Los Angeles*	9
Kiefer, H. A.,	*Los Angeles*	9
Kiger, W. H.,	*Los Angeles*	9
Kilbourne, N. J.,	*Los Angeles*	9
Kilduff, R.,	*Oroville*	2
Kile, R. F.,	*San Francisco*	22
Kilfoy, E. J.,	*Los Angeles*	9
Kilgore, A. M.,	*Hollywood*	9
Kilgore, A. R.,	*San Francisco*	22
Kilgore, E. S.,	*San Francisco*	22
Kilgore, G. L.,	*San Diego*	21
Kimberlin, L. O.,	*San Francisco*	22
Kime, S. W.,	*North Hollywood*	9
Kindall, C. E.,	*Los Angeles*	9
Kindall, L. E.,	*Oakland*	1
Kindopp, D. M.,	*Auburn*	16
King, C. S.,	*Los Angeles*	9
King, E. B.,	*Arroyo Grande*	24
King, E. H.,	*Tujunga*	9
King, H. R.,	*Winters*	38
King, J. A.,	*Ojai*	37
King, J. C. E.,	*San Diego*	21
King, J. M.,	*Los Angeles*	9
Kinney, L. C.,	*San Diego*	21
Kinney, M. A. J.,	*Los Angeles*	9
Kinslow, F. A.,	*San Francisco*	22
Kinzer, E. E.,	*South Pasadena*	9
Kirby, J. M.,	*Bakersfield*	7
Kirchner, A. A.,	*San Fernando*	9
Kirchoff, J. J.,	*Los Angeles*	9
Kirk, A. W.,	*San Francisco*	22
Kirk, J. H.,	*Palo Alto*	27
Kirk, M. E.,	*Oakland*	1
Kirkpatrick, J. E.,	*Los Angeles*	9
Kirkpatrick, J. H.,	*Los Angeles*	9
Kirkpatrick, J. L.,	*Los Angeles*	9
Kirsch, R. L.,	*Pasadena*	9
Kirwin, J. J.,	*Ukiah*	11
Kiser, S. M.,	*Inglewood*	9
Kiskadden, W. S.,	*Los Angeles*	9
Kistinger, W. F.,	*Santa Ana*	15
Kistler, R. H.,	*San Francisco*	22
Kitagawa, K. J.,	*San Francisco*	22
Kitsuda, F. Y.,	*Sacramento*	18
Kjaerbye, C. P. H.,	*Fresno*	4
Klein, I.,	*Los Angeles*	9
Klein, J. M.,	*Hollywood*	9
Klick, J. J.,	*Sacramento*	18
Kling, D. H.,	*Los Angeles*	9
Kluss, E. R.,	*Santa Barbara*	26
Klussmann, H. O. G. T.,	*San Francisco*	22
Knapp, E. V.,	*San Francisco*	22
Knceshaw, R. S.,	*San Jose*	27
Knight, L. C.,	*San Francisco*	22
Knoph, B. W.,	*Brentwood*	23
Knorp, W. F.,	*Burlingame*	25
Knorr, L. R.,	*Concord*	3
Knox, C. R.,	*El Cajon*	21
Kocher, R. A.,	*Carmel*	13
Koda, K.,	*Watsonville*	28
Koebig, W. C. S.,	*Los Angeles*	9
Koefod, H. O.,	*Santa Barbara*	26
Koehler, A. E.,	*Santa Barbara*	26
Koenccke, H. J.,	*Salinas*	13
Koepke, F. H.,	*Watsonville*	28
Koford, H.,	*Oakland*	1
Kohlenberger, C. F. W.,	*Fullerton*	15
Kohlhase, L. H.,	*Los Angeles*	9
Kohlmoos, H. J.,	*Oakland*	1
Kohn, F.,	*Tulare*	35
Kolda, F. O.,	*Alhambra*	9
Kolisch, J. M.,	*Los Angeles*	9
Konantz, O. F.,	*Hollywood*	9
Konigmacher, A. H.,	*Fresno*	4

NAME	CITY	COUNTY SOCIETY NO.
Konttas, P. V.,	*Santa Rosa*	32
Koplin, H.,	*Los Angeles*	9
Korshet, M.,	*San Francisco*	22
Kortheuer, K. H.,	*Calexico*	6
Kosky, A. W.,	*Santa Monica*	9
Kosky, A. A.,	*Santa Monica*	9
Kosterlitz, E.,	*Berkeley*	1
Kracaw, F. C.,	*Oakland*	1
Kraft, R. W.,	*Pasadena*	9
Krahulik, E. J.,	*Hollywood*	9
Kramar, L. G.,	*Fortuna*	5
Kremers, E. D.,	*Pasadena*	9
Kress, G. H.,	*Los Angeles*	9
Kretzschmar, K. E.,	*Los Angeles*	9
Kristensen, W. A.,	*Los Angeles*	9
Kreutzmann, H. A. R.,	*San Francisco*	22
Kroener, W. F.,	*Whittier*	9
Kroger, W. P.,	*Los Angeles*	9
Krohn, H. N.,	*Los Angeles*	9
Kroll, F. W.,	*San Francisco*	22
Krout, B. M.,	*Stockton*	23
Krueger, A. P.,	*Berkeley*	22
Krull, F.,	*Sacramento*	18
Kruse, F. H.,	*San Francisco*	22
Kruse, F. L.,	*San Francisco*	22
Kryder, G. B.,	*Glendale*	9
Kuder, W. S.,	*Oakland*	1
Kuhlman, M. B. K.,	*Oakland*	1
Kuhlmann, F. W.,	*Long Beach*	9
Kuhn, O. E.,	*Veterans Home*	1
Kulaev, A. A. M.,	*San Francisco*	22
Kurtz, C.,	*Los Angeles*	9
Kusel, E. A.,	*Oroville*	2
Kuser, J. H.,	*San Rafael*	10
Kutzmann, A. A.,	*Los Angeles*	9
Kyddson, T. W.,	*Linden*	23
Kylberg, H.,	*Merced*	12

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Lacayo, J. R.,	*Los Angeles*	9
Lacey, J. M.,	*Los Angeles*	9
Lacey, L. E.,	*Oakland*	1
Lacey, M. J.,	*Albany*	1
Lachman, G. S.,	*San Francisco*	22
Laekey, H. J.,	*Oakland*	1
Lackner, L.,	*San Jose*	27
Lacoe, J. R.,	*Los Angeles*	9
Lafontaine, E. C.,	*San Francisco*	22
Lagan, E.,	*San Francisco*	22
Laist, O.,	*San Francisco*	22
Lajoie, R. J.,	*Los Angeles*	9
Lake, T. O.,	*Berkeley*	1
Lamb, E. J.,	*Santa Barbara*	26
Lamb, L. M.,	*Oakland*	1
Lamkin, B. B.,	*Fresno*	4
La Mont, W.,	*Beverly Hills*	9
La Motte, L. A. J.,	*Los Angeles*	9
Lamson, M.,	*Palo Alto*	27
Lamson, R. W.,	*Los Angeles*	9
Lancaster, J. S.,	*Torrance*	9
Landegger, G. P.,	*Los Angeles*	9
Lando, M. E.,	*Oakland*	1
Landon, G. S.,	*San Bernardino*	20
Landrock, G. M.,	*Mill Valley*	10
Lane, C. R.,	*Los Angeles*	9
Lane, C. W.,	*Coronado*	21
Lane, E. H.,	*Los Angeles*	9
Lane, F. H.,	*Los Angeles*	9
Lane, J. A.,	*Eureka*	5
Lang, J. H.,	*Fullerton*	15
Langan, A. J.,	*San Pedro*	9
Langdon, E. E.,	*Santa Monica*	9
Langdon, S. W. R.,	*Stockton*	23
Lange, H. W.,	*Bakersfield*	7
Langer, J.,	*Hilt*	30
Langley, R. W.,	*Los Angeles*	9
Langnecker, H. L.,	*San Francisco*	22
Langstroth, L.,	*San Francisco*	22
Lanphere, G. H.,	*Los Angeles*	9
Larkey, J.,	*Oakland*	1
Larner, J. E.,	*Marysville*	39
Larsen, A. E.,	*San Mateo*	22
Larsen, J. W.,	*Paso Robles*	24
Larson, A. E.,	*Los Angeles*	9
Larson, A. H.,	*Los Angeles*	9
Larson, C. F.,	*Sausalito*	10
Larson, E. E.,	*Los Angeles*	9
Lartigau, A. J.,	*San Francisco*	22
Lasswell, B. J.,	*Quincy*	8
Laton, G. P.,	*Los Angeles*	9
Latta, S. E.,	*Stockton*	23
Laubersheimer, G. A.,	*Los Angeles*	9
Lauder, C. H.,	*Los Angeles*	9
Lavery, W. A.,	*Loyalton*	16
Lawler, P. W.,	*Victorville*	20
Lawler, W. H.,	*Salinas*	13
Lawrence, W.,	*San Francisco*	22
Lawson, J. D.,	*Sacramento*	18
Lawson, T. C.,	*Oakland*	1
Lawyer, P. C.,	*Inglewood*	9
Layman, M. H.,	*San Francisco*	22
Lazard, E. M.,	*Los Angeles*	9
Lazelle, H. G.,	*La Jolla*	21
Leach, W. O.,	*Glendale*	9
Leachman, R. S.,	*Vallejo*	31
Leake, N. A.,	*Torrance*	9
Leake, W. H.,	*Los Angeles*	9
Le Baron, R. O.,	*Talmage*	11
Ledford, R. M.,	*San Diego*	21
Ledyard, C. C.,	*Los Angeles*	9
Lee, D.,	*San Jose*	27
Lee, E. C.,	*San Diego*	21
Lee, F. J.,	*Santa Monica*	9
Lee, F. W.,	*Sacramento*	18
Lee, H. H.,	*San Jose*	27
Lee, L. H.,	*Los Angeles*	9
Lee, R. V. A.,	*Palo Alto*	27
Leef, E.,	*San Francisco*	22
Leet, N. B.,	*Oakland*	1
Leet, R. S.,	*Oakland*	1
Leete, C. M.,	*Pasadena*	9
Lefler, A. B.,	*Los Angeles*	9
Leftwich, O. T.,	*Oakland*	1
Legge, R. T.,	*Berkeley*	1
Leggett, E. A.,	*Auberry*	4
Leggitt, C. M.,	*Northfork*	4
Leggitt, R.,	*Glendale*	9
Leggo, R. C.,	*Crockett*	3
Leidig, L. R.,	*Los Angeles*	35
Leimbach, J. H.,	*Isleton*	18
Leland, H. G.,	*Klamath*	5
Leland, S.,	*San Francisco*	22
Lemere, H. B.,	*Hollywood*	9
Lenker, W. D.,	*San Bernardino*	20
Lennon, M. B.,	*San Francisco*	22
Lennon, T. J.,	*San Francisco*	22
Leonard, A. T.,	*San Francisco*	22
Leonard, E. M.,	*San Francisco*	22
Leonard, J. V.,	*San Francisco*	22
Leonard, W. E.,	*Los Angeles*	9
Lepper, L. E.,	*Los Angeles*	9
Lerned, M. B.,	*Los Angeles*	9
Leveton, A. L.,	*San Francisco*	22
Levin, H. A.,	*Los Angeles*	9
Levin, W.,	*Fresno*	4
Levison, C. G.,	*San Francisco*	22
Levitin, J.,	*San Francisco*	22
Leviton, H. I.,	*Los Angeles*	9
Levy, E. I.,	*San Diego*	21
Levy, J. J.,	*Reedley*	4
Levy, M. L.,	*Los Angeles*	9
Levy, S.,	*Los Angeles*	9
Lewis, C. H.,	*Santa Monica*	9
Lewis, C. E.,	*Auburn*	16
Lewis, E. R.,	*Los Angeles*	9
Lewis, J. D.,	*Santa Barbara*	26
Lewis, K.,	*Beverly Hills*	9
Lewis, L. R.,	*Los Angeles*	9
Lewis, M. L.,	*Petaluma*	32
Lewis, N. H.,	*Hollywood*	9
Lewis, S. A.,	*Hollywood*	9
Libby, A. A.,	*Pasadena*	9
Liddell, E. B.,	*Los Angeles*	9
Lien, F. O.,	*Merced*	12
Liles, L. M.,	*Watsonville*	28
Liliencrantz, G. H.,	*Oakland*	1
Liljedahl, E. N.,	*Los Angeles*	9
Liljencrantz, E.,	*Oakland*	1
Lilley, W. E.,	*Merced*	12
Linde, F. G.,	*San Francisco*	22
Lindberg, A. L.,	*Los Angeles*	9
Lindemulder, F. G.,	*San Diego*	21
Lindquist, C. A.,	*Los Angeles*	9
Lindsay, C. V.,	*Encinitas*	21
Lindsay, H. C. L.,	*Pasadena*	9
Lindsay, W. K.,	*Sacramento*	18
Lindsey, J. O.,	*Glendale*	9
Lindsley, St. C. R.,	*Los Angeles*	9
Lineer, A. S.,	*Los Angeles*	9
Linhart, L. R.,	*Los Angeles*	9
Linn, J. L.,	*Glendale*	9
Linthicum, F. H.,	*Los Angeles*	9
Lipkis, A.,	*Los Angeles*	9
Lipp, M. J.,	*Sacramento*	18
Lippman, M. H.,	*San Francisco*	22
Lipson, B.,	*Los Angeles*	9
Lipson, I. M.,	*Visalia*	35
Lischner, H.,	*Los Angeles*	9
Lisser, H.,	*San Francisco*	22
Lissner, H. H.,	*Los Angeles*	9
Lista, L. J.,	*Yreka*	30
Liston, E.,	*Palo Alto*	27
Litchfield, H.,	*Los Angeles*	9
Litle, E. W.,	*Los Angeles*	9
Little, R. P.,	*Santa Paula*	37
Little, T. C.,	*San Diego*	21
Lockwood, M. S.,	*National City*	21
Lockwood, S. A.,	*National City*	21
Loe, H. D.,	*Oakland*	1
Loehr, B. E.,	*San Jose*	27
Logan, N. H.,	*Oakland*	1
Logsdon, R. O.,	*San Diego*	21
Lohmann, H G.,	*Oakland*	1
Lohse, J. L.,	*Oakland*	1
Loizeaux, E. S.,	*San Diego*	21
Lokrantz, S. R.,	*Los Angeles*	9
Lonergan, L.,	*Loma Linda*	20
Long, H. E.,	*Berkeley*	1
Long, S. C.,	*Bakersfield*	7
Loomis, F. M.,	*Oakland*	1
Looser, R. V.,	*Hollywood*	9
Lopizich, I. J.,	*Los Angeles*	9
Lordan, J. P.,	*Los Angeles*	9
Lorentz, R., Jr.,	*San Francisco*	22
Lorenz, H. E.,	*Sacramento*	18
Loughlin, E. L.,	*Los Angeles*	9
Lounsberry, C. R.,	*San Diego*	21
Loutzenheiser, J. J.,	*San Francisco*	22
Love, C. A., Jr.,	*San Bernardino*	20
Love, E. C.,	*Calistoga*	14
Lovejoy, E. D.,	*Los Angeles*	9
Lovely, J. P.,	*San Jose*	27
Loveren, G. S.,	*Santa Barbara*	26
Low, T. C.,	*Los Angeles*	9
Lowe, F. A.,	*San Francisco*	22
Lowman, C. L. R.,	*Los Angeles*	9
Lucas, W.,	*Los Angeles*	9
Lucas, W. P.,	*San Francisco*	22
Lucas, W. S.,	*Richmond*	3
Luckie, J. B.,	*Pasadena*	9
Luechauer, K. D.,	*Fresno*	4
Lum, D. D.,	*Alameda*	1
Lum, P. A.,	*Dos Palos*	12
Lumsden, A. G.,	*Petaluma*	32
Lund, C. S.,	*Willows*	38
Lundegaard, E. M.,	*Oakland*	1
Lundquist, D. T.,	*Palo Alto*	27
Lunsford, C. J.,	*Oakland*	1
Lurie, S. A.,	*Los Angeles*	9
Lusignan, H. R.,	*Monterey*	13
Luton, G. R.,	*Santa Barbara*	26
Luttrell, P. H.,	*San Francisco*	22
Lyle, A. G.,	*San Francisco*	22
Lyman, G. D.,	*San Francisco*	22
Lyman, T.,	*Sacramento*	18
Lynch, E. C.,	*Montebello*	9
Lynch, F. W.,	*San Francisco*	22
Lynch, W. P., Jr.,	*Stockton*	23

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Mabee, M.,	*Santa Ana*	15
MacColl, D. R.,	*Los Angeles*	9
MacCracken, W. B.,	*Berkeley*	1
MacDonald, F. A.,	*Sacramento*	18
MacDonald, R. P.,	*Los Angeles*	9
Maee, L. S.,	*San Francisco*	22
Mace, R. D.,	*Los Angeles*	9
Macfarlane, D. A.,	*Berkeley*	1
Mack, A. E.,	*Glendale*	9
Mack, C. W.,	*Livermore*	1
Mackay, J. G.,	*Auburn*	16
Mackenzie, W. W.,	*Hollywood*	9
Mackey, J. G.,	*San Fernando*	9
Macklin, R. K.,	*Pasadena*	9
MacKinnon, D. S.,	*W. Los Angeles*	9
MacLafferty, N. C.,	*Soquel*	28
MacLean, H. G.,	*Oakland*	1
Macleish, A. C.,	*Los Angeles*	9
Maclennan, A. L.,	*Pasadena*	9
MacMillan, D. W.,	*Los Angeles*	9
MacMillan, H. A.,	*Long Beach*	9
Macomber, E. B.,	*Burlingame*	25
Macomber, H. W.,	*Burlingame*	25
Macpherson, D. G.,	*San Francisco*	22
Macpherson, F. L.,	*San Diego*	21
Macpherson, W. E.,	*Loma Linda*	20
MacRae, A. D.,	*San Francisco*	22
Madden, T. F.,	*Fresno*	4
Madsen, L. J.,	*Santa Monica*	9
Magan, P. T.,	*San Marino*	9
Magan, W. P.,	*Covina*	9
Maghy, C.,	*Los Angeles*	9
Magoon, L. B.,	*San Jose*	27
Magrath, W. A. S.,	*Oakland*	1
Mahan, L. B.,	*San Diego*	21
Mahoney, L. E.,	*Santa Monica*	9
Main, R. C.,	*Santa Barbara*	26
Maisler, S.,	*San Francisco*	22
Majer, R. G.,	*Los Angeles*	9
Majors, E. A.,	*Oakland*	1
Makinson, F. R.,	*Oakland*	1
Malcolmson, O. K.,	*Santa Monica*	9
Malis, S.,	*Los Angeles*	9
Malkin, G. M.,	*Huntington Park*	9
Mallery, J. H.,	*San Fernando*	21
Malmgren, G. E.,	*Los Angeles*	9
Malone, M. C.,	*San Francisco*	22
Malone, W. M.,	*San Francisco*	22
Maloney, H. P.,	*Oakland*	1
Mandel, G.,	*Los Angeles*	9
Mandeville, F. B.,	*Oakland*	1
Maner, G. D.,	*Los Angeles*	9
Mangan, P. J.,	*San Francisco*	22
Manley, D. J.,	*Hayward*	1
Mann, H. H.,	*Los Angeles*	9
Mann, V. L.,	*Loma Linda*	9
Manning, T. P.,	*Los Angeles*	9
Manning, W. R.,	*Fillmore*	37
Mansfeldt, J. H.,	*San Francisco*	22

NAME	CITY	COUNTY SOCIETY NO.
Manson, G.,	*Fresno*	4
Manson, R. M.,	*Hayward*	1
Mantle, V. M.,	*Los Angeles*	9
Manton, W. W.,	*Pasadena*	9
March, H. W.,	*Grass Valley*	16
March, W. B.,	*Burson*	23
Marchildon, J. W.,	*Los Angeles*	9
Marchus, D. B.,	*Imperial*	6
Marcus, H.,	*San Francisco*	22
Marcus, S. M.,	*Los Angeles*	9
Mardis, B. A.,	*San Francisco*	22
Mark, A. E.,	*Hollywood*	9
Markel, H. H.,	*San Francisco*	22
Markolf, H. F.,	*Pasadena*	9
Marks, M.,	*Long Beach*	9
Marks, S. H.,	*Pittsburg*	3
Markthaler, E. L.,	*Santa Barbara*	26
Marmor, W. A.,	*Los Angeles*	9
Marnell, F. S.,	*Stockton*	23
Maroon, J. L.,	*Santa Ana*	15
Marquis, C. E.,	*Oakland*	1
Marr, J. B.,	*Covina*	9
Marsan, D. A.,	*Oakland*	1
Marsden, S. A.,	*Santa Ana*	15
Marsh, C.,	*Sebastopol*	32
Marsh, O. G.,	*San Diego*	21
Marshall, B. M.,	*Eureka*	5
Marshall, J. M.,	*San Luis Obispo*	24
Marshall, O. C.,	*Watsonville*	28
Marston, C. B.,	*San Rafael*	10
Marston, H. E.,	*San Rafael*	10
Martell, B. S.,	*Santa Ana*	15
Martin, A. T.,	*Los Angeles*	9
Martin, E. P. C.,	*San Diego*	21
Martin, G. S.,	*Susanville*	8
Martin, H. W.,	*Los Angeles*	9
Martin, L. E.,	*Los Angeles*	9
Martin, M. L.,	*Los Angeles*	9
Martin, P. T.,	*San Jose*	27
Martin, R. C.,	*San Francisco*	22
Martin, R. C.,	*San Bernardino*	20
Martin, W. D.,	*Los Angeles*	9
Martine, A.,	*La Jolla*	21
Martins, S. M.,	*Los Angeles*	9
Martyn, G.,	*Los Angeles*	9
Marx, R.,	*Los Angeles*	9
Marxmiller, H. G.,	*Los Angeles*	9
Mason, B. S.,	*San Jose*	27
Mason, B. B.,	*Laguna Beach*	15
Mason, C. V.,	*Livermore*	1
Mason, H. E.,	*Redwood City*	25
Mason, M. L.,	*San Jose*	27
Mason, V. R.,	*Los Angeles*	9
Masterson, J. R.,	*Berkeley*	1
Mathé, C. P.,	*San Francisco*	22
Mathes, M. E.,	*San Francisco*	22
Mathews, S. S.,	*Los Angeles*	9
Mathewson, C.,	*Fresno*	4
Mathewson, C., Jr.,	*San Francisco*	22
Mathias, C. M.,	*Tulare*	35
Matlock, T. T.,	*Wasco*	7
Matsumura, K.,	*San Francisco*	22
Mattison, C. W.,	*Los Angeles*	9
Mattison, S. J.,	*Pasadena*	9
Matzger, E.,	*San Francisco*	22
Maupin, J. L.,	*Fresno*	4
Mawdsley, H. L.,	*San Mateo*	25
Maxson, E. S.,	*Alhambra*	9
Maxwell, A. F.,	*San Francisco*	22
Maxwell, R. E.,	*Modesto*	33
May, H. C.,	*Los Angeles*	9
May, J. A.,	*San Diego*	21
May, L. B.,	*Bakersfield*	7
Mayers, M. M.,	*Los Angeles*	9
Mayes, W. C.,	*Santa Ana*	15
Mayfield, C.,	*Long Beach*	9
Mayman, E.,	*Modesto*	33
Maynard, M. T-R.,	*San Jose*	27
Mays, A. H.,	*Sausalito*	10
McAllister, H. R.,	*Taft*	7
McAllister, O. O. T.,	*Oakland*	1
McAnally, J. F.,	*Roseville*	16
McArthur, D. D.,	*Los Angeles*	9
McArthur, P. R.,	*Los Angeles*	9
McAtee, J. S.,	*Los Angeles*	9
McBride, W. C., Jr.,	*Yreka*	30
McBurney, B. A.,	*Pomona*	9
McBurney, R. D.,	*Los Angeles*	9
McCallister, C. H.,	*Los Angeles*	9
McCann, D. B.,	*Los Angeles*	9
McCann, D. F.,	*McCloud*	30
McCann, F. E.,	*Monrovia*	9
McCarthy, F. J.,	*San Francisco*	22
McCarthy, H. L.,	*Los Angeles*	9
McCarthy, J. B.,	*Carmel*	13
McCartney, O. D.,	*Glendale*	9
McCarty, H.,	*Agnew*	27
McCarty, R. B.,	*Riverside*	17
McCausland, W. S.,	*Chula Vista*	21
McChesney, G. J.,	*San Francisco*	22
McCleave, T. C.,	*Berkeley*	1
McClelland, E. S.,	*Los Angeles*	9
McClendon, S. J.,	*San Diego*	21
McClure, G.,	*Oakland*	1
McClure, J. C.,	*Lindsay*	35
McClure, J. L.,	*San Francisco*	22
McClurkin, A. A.,	*Los Angeles*	9
McColl, W. F.,	*San Diego*	21
McCombs, V.,	*Los Angeles*	9
McConnell, O. G.,	*San Jose*	27
McCool, J. L.,	*San Francisco*	22
McCool, W. F.,	*Los Angeles*	9
McCoskey, G.,	*Stockton*	23
McCoy, C. A.,	*Los Angeles*	9
McCoy, E. T.,	*Los Angeles*	9
McCoy, W. E.,	*Ventura*	37
McCracken, J. H.,	*San Pedro*	9
McCradie, R. D.,	*Oakland*	1
McCrea, F. R.,	*Long Beach*	9
McCue, J. E.,	*Crows Landing*	33
McCullough, F. E.,	*Oakland*	1
McCullough, J. M.,	*Crockett*	3
McCullough, W. A.,	*Hollywood*	9
McCuskey, C. F.,	*Los Angeles*	9
McDonald, A. C.,	*Huntington Park*	9
McDonald, J.,	*San Francisco*	22
McDonnell, C. H.,	*Sacramento*	18
McDowell, B. E.,	*Merced*	12
McElhinney, P. P. B.,	*Long Beach*	9
McFarlane, A. H.,	*Mountain View*	27
McGavack, T. H.,	*San Francisco*	22
McGee, R. P.,	*Los Angeles*	9
McGehee, W. H.,	*Fresno*	4
McGibbon, D.,	*Los Angeles*	9
McGill, P. R.,	*Hollywood*	9
McGinnis, J. J.,	*New York*	22
McGinty, A. T.,	*San Jose*	27
McGovney, R. B.,	*Santa Barbara*	26
McGranahan, J. H.,	*Long Beach*	9
McGrath, A. K.,	*Sonoma*	14
McGuire, F. A.,	*Stockton*	23
McGuire, J. B.,	*Mt. Shasta*	30
McGuire, J. J.,	*San Francisco*	22
McGuire, T. E.,	*Burbank*	9
McGurk, R. T.,	*Stockton*	23
McHugh, J. A.,	*Stockton*	23
McHugh, P. H.,	*Stockton*	23
McHugh, T. R.,	*Los Angeles*	9
McIntosh, A. M.,	*Berkeley*	1
McKay, E. E.,	*Hollister*	19
McKay, W. T.,	*Long Beach*	9
McKee, C. B.,	*Sacramento*	18
McKee, E. N.,	*Eagle Rock*	9
McKee, H. R.,	*Lynwood*	9
McKee, K. S.,	*Bakersfield*	7
McKee, W. C.,	*Los Angeles*	9
McKeever, F. M.,	*Los Angeles*	9
McKelvy, R. W.,	*Los Angeles*	9
McKenna, W. J.,	*Los Angeles*	9
McKenney, A. C., Jr.,	*San Francisco*	22
McKenney, P. W.,	*Alturas*	8
McKenzie, C. R.,	*Oakland*	1
McKenzie, R. B.,	*San Francisco*	22
McKibbin, J.,	*Los Angeles*	9
McKinnon, A. A.,	*Placerville*	18
McKinnon, D. D.,	*Los Angeles*	9
McKnight, W. B.,	*Portola*	8
McLain, L. C.,	*Bakersfield*	7
McLaughlin, R. C.,	*Los Angeles*	9
McLaughlin, T. H.,	*Hollywood*	9
McLean, D.,	*Sacramento*	18
McLeish, A. H.,	*Yountville*	14
McLeod, F. L.,	*Los Angeles*	9
McLeod, J. H.,	*Santa Rosa*	32
McManus, F. P.,	*Esparto*	38
McMillan, E. H.,	*Pasadena*	9
McMullin, S.,	*Yuba City*	39
McMurdo, P. F.,	*San Francisco*	22
McMurtry, M. S.,	*Clovis*	4
McNab, T. R.,	*Los Angeles*	9
McNamara, D. H.,	*Santa Barbara*	26
McNamara, T. M., Jr.,	*Bakersfield*	7
McNaught, J. B.,	*San Francisco*	22
McNeil, D.,	*Sacramento*	18
McNeil, H. G.,	*Los Angeles*	9
McNeil, W. T.,	*Stockton*	23
McNeile, L. G.,	*Los Angeles*	9
McNulty, A. H.,	*San Francisco*	22
McPharlin, J. H.,	*Salinas*	13
McPheeters, E. R.,	*Modesto*	33
McPherson, M. D.,	*Santa Cruz*	28
McQuade, J.,	*San Francisco*	22
McReynolds, R. P.,	*Los Angeles*	9
McVicker, H. R.,	*Weed*	30
McWhirter, W. L.,	*Centerville*	1
Meade, F. J.,	*Los Angeles*	9
Meads, A. M.,	*Oakland*	1
Meals, R. W.,	*Los Angeles*	9
Means, P. C.,	*Santa Barbara*	26
Meherin, J. M.,	*San Francisco*	22
Mehlin, G. B.,	*San Diego*	21
Mehrmann, H. B.,	*Oakland*	1
Meininger, L. L.,	*San Francisco*	22
Meininger, W. M.,	*San Francisco*	22
Meland, O. N.,	*Los Angeles*	9
Melkonian, L.,	*Gilroy*	27
Mellinger, W. J.,	*Santa Barbara*	26
Melvin, J. T.,	*Porterville*	35
Mendelsohn, L.,	*Saratoga*	27
Meneray, P. A.,	*Santa Rosa*	32
Menser, A. H.,	*Corning*	34
Mensor, M. C.,	*San Francisco*	22
Mentzer, M. J.,	*San Francisco*	22
Mentzer, S. H.,	*San Francisco*	22
Meredith, H. H.,	*Oakland*	1
Merrill, B. E.,	*Oakland*	1
Merrill, E. R.,	*Santa Barbara*	26
Merrill, H. P.,	*Los Angeles*	9
Merrill, J. A.,	*Monterey*	13
Merrill, R. E.,	*Burbank*	9
Merrithew, E. W.,	*Martinez*	3
Mettier, S. R.,	*San Francisco*	22
Meyenberg, W. D.,	*Salinas*	13
Meyer, A. J.,	*Glendale*	9
Meyer, H.,	*San Francisco*	22
Meyer, W. F.,	*San Diego*	21
Meyers, E. M.,	*Oakland*	1
Meyers, E. L.,	*Chico*	2
Michael, L.,	*San Leandro*	1
Michael, P. P.,	*Oakland*	1
Michelena, N. A.,	*Los Angeles*	9
Michelson, L.,	*San Francisco*	22
Mikels, B. M.,	*Long Beach*	9
Mikels, F. M.,	*Hollywood*	9
Miles, R. H.,	*Alameda*	1
Miles, W. L.,	*Los Angeles*	9
Milholland, W. G.,	*Fresno*	4
Millasich, V.,	*Fresno*	4
Miller, A. W.,	*Riverside*	17
Miller, A. V.,	*Porterville*	35
Miller, C. M., Jr.,	*Olive View*	9
Miller, E. P.,	*Riverside*	17
Miller, F. F.,	*San Diego*	21
Miller, F. P.,	*Los Angeles*	9
Miller, F. W.,	*Los Angeles*	9
Miller, H.,	*Los Angeles*	9
Miller, H. A.,	*Alameda*	1
Miller, H. E.,	*San Francisco*	22
Miller, H. R.,	*Chino*	20
Miller, I. S.,	*Colton*	20
Miller, L. G.,	*Imola*	14
Miller, N.,	*Porterville*	35
Miller, O. A.,	*Spadra*	11
Miller, P. D.,	*Dinuba*	35
Miller, R. F.,	*Los Angeles*	9
Miller, R. R.,	*Pasadena*	9
Miller, S. J.,	*Long Beach*	9
Miller, T.,	*San Diego*	21
Miller, T. K.,	*Patton*	20
Miller, W. J.,	*Los Angeles*	9
Miller, W. McC.,	*Auburn*	16
Milliken, W. P.,	*Oakland*	1
Mills, L.,	*Los Angeles*	9
Mills, W.,	*Oakland*	1
Millspaugh, W. P.,	*Los Angeles*	9
Millzner, R. J.,	*San Francisco*	22
Milo, H. W.,	*Mountain View*	27
Minaker, A. J.,	*San Francisco*	22
Miner, L. L.,	*Los Angeles*	9
Minna, J. B.,	*Calexico*	6
Misch, H. B.,	*Los Angeles*	9
Missall, A. S.,	*Santa Maria*	26
Missner, F. R.,	*Oakland*	1
Mitchell, C. O.,	*Fresno*	4
Mitchell, H. H.,	*Oakland*	1
Mitchell, W. E.,	*Berkeley*	1
Mizel, M. L.,	*San Francisco*	22
Mizener, M.,	*Southgate*	9
Mock, D. C.,	*Redlands*	20
Modern, F. S.,	*Los Angeles*	9
Moffat, W. McK.,	*Santa Barbara*	26
Moffitt, E. J.,	*Los Angeles*	9
Moffitt, H. C.,	*San Francisco*	22
Moffitt, T. W.,	*Hollywood*	9
Mogan, R. F.,	*Los Angeles*	9
Mohun, C. C., Jr.,	*San Francisco*	22
Mohun, M.,	*San Mateo*	25
Molgaard, J.,	*San Francisco*	25
Molitor, N.,	*San Diego*	21
Mollath, A. L.,	*Guadalupe*	26
Molony, W. R.,	*Los Angeles*	9
Molony, W. R., Jr.,	*Los Angeles*	9
Monson, L. P.,	*San Francisco*	1
Montalvan, J.,	*Oakland*	1
Monteith, R. F.,	*Redwood City*	25
Montgomery, C. H.,	*Los Angeles*	9
Montgomery, D. W.,	*San Francisco*	22
Montgomery, M. F.,	*San Francisco*	22
Montgomery, M. L.,	*San Francisco*	22
Montgomery, W. O.,	*San Francisco*	22
Moodie, A. R.,	*Taft*	7
Moody, A. M.,	*San Francisco*	22
Moody, E. E.,	*Los Angeles*	9
Mooney, H. S.,	*Los Angeles*	9
Mooney, T. S.,	*Springville*	35
Moor, F. B.,	*Loma Linda*	20
Moore, A. H.,	*Los Angeles*	9
Moore, A. W.,	*Los Angeles*	9
Moore, C. B.,	*San Francisco*	22
Moore, C. E.,	*San Jose*	27
Moore, D. S.,	*South Pasadena*	9
Moore, E. C.,	*Los Angeles*	9
Moore, G. W.,	*Los Angeles*	9
Moore, G.,	*Oakland*	1
Moore, H. A.,	*Berkeley*	1

NAME	CITY	COUNTY SOCIETY NO.
Moore, J. B.,	*Fresno*	4
Moore, L. A. R.,	*San Francisco*	22
Moore, L. S.,	*San Jose*	27
Moore, M. H.,	*Fresno*	4
Moore, N. L.,	*Santa Ana*	15
Moore, O. M.,	*Bell*	9
Moore, P. H.,	*Hollywood*	9
Moore, R.,	*Los Angeles*	9
Moore, T. V.,	*San Jose*	27
Moore, W. G.,	*San Francisco*	22
Moore, W. H.,	*Bakersfield*	7
Moose, R. M.,	*San Bernardino*	20
Mordoff, C. E.,	*Oakland*	1
Morgan, F. R.,	*Van Nuys*	9
Morgan, J. W.,	*San Francisco*	22
Morgan, J. D., Jr.,	*Fresno*	4
Morgan, N. D.,	*San Francisco*	22
Morris, B. G.,	*Indio*	17
Morris, C. A.,	*Bakersfield*	7
Morris, E.,	*Auberry*	4
Morris, G. H.,	*Santa Maria*	26
Morris, J. K., Jr.,	*Modesto*	33
Morris, K. G.,	*Petaluma*	32
Morris, L. M.,	*San Francisco*	22
Morris, M.,	*San Francisco*	22
Morris, R. L.,	*San Francisco*	22
Morris, R. H.,	*San Francisco*	22
Morrison, H. C.,	*Oklahoma*	9
Morrison, L. F.,	*San Francisco*	22
Morrison, N. D.,	*San Mateo*	25
Morrison, W. A.,	*Los Angeles*	9
Morrissey, E. J.,	*San Francisco*	22
Morrow, H.,	*San Francisco*	22
Morse, D. L.,	*San Francisco*	22
Morse, H. A.,	*Oakland*	1
Mortensen, E. S.,	*Santa Monica*	9
Mortensen, J. P.,	*Los Angeles*	9
Mortensen, W. S.,	*Santa Monica*	9
Morton, A. W.,	*San Francisco*	22
Morton, D. G.,	*San Francisco*	22
Morton, L. B.,	*Los Angeles*	9
Mosby, G.,	*Oakland*	1
Mosher, W. F.,	*Ventura*	37
Mote, C. D.,	*San Francisco*	22
Motheral, R.,	*Hanford*	36
Motley, E. G.,	*Santa Ana*	15
Mott, E. L.,	*Fresno*	4
Mottram, L. D.,	*Modesto*	33
Moulton, D. H.,	*Chico*	2
Moulton, E. S.,	*Corning*	34
Mountford, G. T.,	*Coalinga*	4
Mourer, H. J.,	*Long Beach*	9
Movitt, S. I.,	*Los Angeles*	9
Movius, H. J.,	*Los Angeles*	9
Moyle, C. A.,	*Merced*	12
Mudd, J. L.,	*Merced*	12
Mudd, S. G.,	*Los Angeles*	9
Mugford, I. K.,	*Sacramento*	18
Mugler, F. R.,	*San Luis Obispo*	24
Muhl, A. M.,	*San Diego*	21
Mulder, E. I.,	*Compton*	9
Mulfinger, C. L.,	*Los Angeles*	9
Mullaly, E. F.,	*Vallejo*	31
Mullen, E. W.,	*Agnew*	27
Mullen, J. L.,	*Sacramento*	18
Mullen, T. F.,	*San Francisco*	22
Mulligan, H. R.,	*Hollywood*	9
Mundall, B. P.,	*Glendale*	9
Munter, E. J.,	*San Francisco*	22
Murakami, K.,	*Salinas*	13
Murphy, H. C.,	*Salinas*	13
Murphy, J. E.,	*Sacramento*	18
Murphy, P. J.	*Los Angeles*	9
Murphy, W. H.,	*San Mateo*	25
Murray, D. H.,	*Napa*	14
Murrieta, A. J.,	*Los Angeles*	9
Musante, A. S.,	*San Francisco*	22
Musser, L. P.,	*Oakland*	1
Myers, C.,	*Los Angeles*	9
Myers, G. E.,	*Los Angeles*	9
Myers, L.,	*San Diego*	21
Myers, O. R.,	*Eureka*	5
Myers, T. C.,	*Los Angeles*	9

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Naeckel, H. W.,	*Riverside*	17
Naffziger, H. C.,	*San Francisco*	22
Nagel, G. W.,	*San Francisco*	22
Nagelman, C. B.,	*Santa Barbara*	26
Nahman, A. H.,	*San Francisco*	22
Napheys, W. D.,	*Los Angeles*	9
Nasser, G. E.,	*San Francisco*	22
Naughton, J. P.,	*Los Angeles*	9
Nazarin, G. S.,	*San Francisco*	22
Neff, F. E.,	*Compton*	9
Negley, J. C.,	*Los Angeles*	9
Neighbors, C. A.,	*Anaheim*	15
Neil, J. M.,	*Oakland*	1
Nelson, A. E.,	*Los Angeles*	9
Nelson, A. N.,	*Los Angeles*	9
Nelson, C. F.,	*Los Angeles*	9
Nelson, C. R.,	*Oakland*	1
Nelson, C. V.,	*Los Angeles*	9
Nelson, E. A.,	*Los Angeles*	9
Nelson, E. S.,	*Los Angeles*	9
Nelson, F. H.,	*Los Angeles*	9
Nelson, J. E.,	*Lodi*	23
Nelson, R. C.,	*Beverly Hills*	9
Nelson, R. F.,	*Oakland*	1
Nesburn, H. R.,	*Hollywood*	9
Nesche, G. E.,	*Oakland*	1
Neslund, H. C.,	*Anahcim*	15
Nethercut, R. A.,	*San Francisco*	22
Netzley, R. E.,	*Pasadena*	9
Neubert, A. D.,	*Redlands*	20
Neumann, E. V.,	*Hollywood*	9
Neville, J. E.,	*Glendale*	9
Nevin, J. L.,	*San Bernardino*	20
Nevius, F. P.,	*Antioch*	3
Newbarr, B. B.,	*Los Angeles*	9
Newbarr, F. D.,	*Los Angeles*	9
Newbecker, C. G.,	*Hanford*	4
Newberry, F. J.,	*Los Angeles*	9
Newcomb, A. T.,	*Pasadena*	9
Newell, E.,	*San Jose*	27
Newell, R. R.,	*San Francisco*	22
Newkirk, H. D.,	*Anaheim*	15
Newman, A.,	*San Francisco*	22
Newman, H. W.,	*San Francisco*	22
Newman, L.,	*San Francisco*	22
Newman, M. H.,	*Los Angeles*	9
Newman, R. W.,	*Suisun*	31
Newman, W. H.,	*San Diego*	21
Newman, W. W.,	*San Francisco*	22
Newmark, P.,	*Los Angeles*	9
Newson, H. E.,	*San Francisco*	22
Newton, A. H.,	*Yreka*	30
Newton, E. B.,	*Oakland*	1
Newton, H. D.,	*San Diego*	21
Nicholas, C. Z.,	*Santa Barbara*	26
Nichols, F. C.,	*Los Angeles*	9
Nichols, J. N.,	*Los Angeles*	9
Nichols, R. E.,	*Woodland*	38
Nichols, R. C.,	*Ontario*	20
Nicholson, J. W.,	*Porterville*	35
Nicholson, J.,	*Los Angeles*	9
Nicholson, R. M.,	*Los Angeles*	9
Nicoll, J. R. P.,	*Santa Ana*	15
Nider, G. K.,	*Fresno*	4
Niebel, H. L.,	*Palo Alto*	27
Niebergall, H. A.,	*Los Angeles*	9
Nielsen, H. W.,	*Fowler*	4
Nielsen, J. C. E.,	*San Diego*	21
Nielsen, J. M.,	*Los Angeles*	9
Nielsen, J. W.,	*San Luis Obispo*	24
Nielson, L. R.,	*Fresno*	4
Niemand, F. G.,	*San Francisco*	22
Nies, A.,	*Orange*	15
Nies, C. A.,	*Los Angeles*	9
Nilsson, P.,	*Long Beach*	9
Nippert, E. F.,	*Los Angeles*	9
Nisbet, T. W.,	*Pasadena*	9
Nittler, A. N.,	*Santa Cruz*	28
Nixon, N. K.,	*Los Angeles*	9
Noall, E. T.,	*Santa Rosa*	32
Noble, B. E.,	*Los Angeles*	9
Noble, C. A., Jr.,	*San Francisco*	22
Noble, T. E.,	*Long Beach*	9
Noel, M. S.,	*San Francisco*	22
Noetling, P. R.,	*Angels Camp*	23
Nolan, O. F.,	*San Francisco*	22
Nolan, T. J.,	*San Francisco*	22
Norman, G. F.,	*Eureka*	5
Norris, C. E.,	*Eureka*	5
Norris, W. J.,	*Los Angeles*	9
Northrop, R. S.,	*Napa*	14
Northway, W. H.,	*Stanford Univ.*	27
Novy, F. G.,	*Oakland*	1
Nuttall, J. P.,	*Santa Monica*	9
Nutting, F. J.,	*Santa Monica*	9
Nutting, R. J.,	*Oakland*	1
Nuzum, F. R.,	*Santa Barbara*	26

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Oakleaf, D. C.,	*Cloverdale*	32
Oatman, H. C.,	*San Diego*	21
Oatman, H. C., Jr.,	*San Diego*	21
O'Brien, G.,	*Sacramento*	18
O'Brien, J. W.,	*Sacramento*	18
O'Brien, J. J.,	*Los Angeles*	9
O'Connor, G. B.,	*San Francisco*	22
O'Connor, J. H.,	*San Francisco*	22
O'Connor, J. J.,	*Los Angeles*	9
O'Connor, R. E.,	*Los Angeles*	9
O'Connor, R. P.,	*Oakland*	1
O'Connor, T. C., Jr.,	*Lodi*	23
O'Connor, T. H.,	*San Francisco*	22
O'Donnell, F. J.,	*Stockton*	23
O'Donnell, J. M.,	*Hollister*	19
Oechsli, W. R.,	*Olive View*	9
Offield, A. L.,	*Burlingame*	25
Ohannesian, F.,	*Sacramento*	18
Ohanneson, J.,	*Alameda*	1
Ohnemuller, C. E.,	*Los Angeles*	9
Okami, S.,	*Terminal Island*	9
Okonogi, B.,	*Fresno*	4
Oldenbourg, L. A.,	*Berkeley*	1
Olberg, F. H.,	*Redding*	29
Olds, W. H.,	*Los Angeles*	9
Oliver, H. R.,	*San Francisco*	22
Oliver, W. A.,	*San Francisco*	25
Olmsted, R. C.,	*Pasadena*	9
Olsen, C. W.,	*Los Angeles*	9
Olsen, D. M. R.,	*Berkeley*	1
Olsen, E. R.,	*San Francisco*	22
Olsen, R. S.,	*Los Angeles*	9
Olsen, S.,	*San Francisco*	22
Olsen, X.,	*San Bernardino*	20
Olson, G. M.,	*Los Angeles*	9
Olson, G. W.,	*Fullerton*	15
Omelvena, J. G.,	*San Diego*	21
O'Neill, B. J., Jr.,	*San Diego*	21
O'Neill, J. N.,	*Los Angeles*	9
O'Neill, J. R.,	*San Francisco*	22
Onesti, S. J.,	*San Francisco*	22
Oppenheimer, L. I.,	*Oakland*	1
Orcutt, A. H.,	*Oakland*	1
Orella, F. R.,	*San Francisco*	22
Ormsby, E. A.,	*Centerville*	1
Orr, J.,	*Oakland*	1
Osborn, H. B.,	*Fillmore*	37
Osborne, C. J.,	*San Diego*	21
Osburn, J. N. N.,	*Los Angeles*	9
Ostroff, R. A.,	*San Francisco*	22
Otis, M. R.,	*Los Angeles*	9
Otis, N. M.,	*Santa Monica*	9
Ott, E. R.,	*Berkeley*	1
Ottinger, M. R.,	*San Francisco*	22
Otto, F. W.,	*Los Angeles*	9
Overstreet, L. J.,	*San Francisco*	22
Oviedo, G. F.,	*San Francisco*	22
Owen, C. S.,	*National City*	21
Owen, C. C.,	*San Bernardino*	20
Owen, E. D.,	*San Francisco*	22
Owen, G. R.,	*Los Angeles*	9
Owens, R. L.,	*Lodi*	23
Owens, W. R.,	*Glendale*	9
Oyler, J. D.,	*Los Angeles*	9

— P —

Pace, P. T.,	*San Jose*	27
Packard, L. A.,	*Bakersfield*	7
Padden, E. H.,	*Alameda*	1
Page, B. H.,	*San Mateo*	25
Page, C. W.,	*Berkeley*	1
Page, W. E.,	*Oakland*	1
Pahl, P. C. H.,	*Los Angeles*	9
Paige, G. A.,	*Anaheim*	15
Paine, N. C.,	*Glendale*	9
Palamountain, W. B.,	*Oakland*	1
Pallais, A.,	*Los Angeles*	9
Pallesen, M. G.,	*Walnut Grove*	18
Pallesen, V. W.,	*Walnut Grove*	18
Pallette, E. C.,	*Los Angeles*	9
Pallette, E. M.,	*Los Angeles*	9
Palmer, B. M.,	*Oakland*	1
Palmer, C. B.,	*San Francisco*	22
Palmer, E. O.,	*Hollywood*	9
Palmer, R. S.,	*Pomona*	9
Palmer, W. B.,	*Long Beach*	9
Parizek, F. J.,	*Los Angeles*	9
Park, D. B.,	*Vallejo*	31
Parker, A. S.,	*Merced*	12
Parker, C. H.,	*Pasadena*	9
Parker, G.,	*Salinas*	13
Parker, H. R.,	*Oakland*	1
Parker, J. A.,	*Merced*	12
Parker, J. A.,	*Los Angeles*	9
Parker, J. T.,	*Oakland*	1
Parker, J. L.,	*Brawley*	6
Parker, J. A.,	*Los Angeles*	9
Parker, L. O.,	*San Francisco*	22
Parker, T. A.,	*La Jolla*	21
Parker, W. B.,	*Los Angeles*	9
Parkinson, R. H.,	*San Francisco*	22
Parkinson, S. N.,	*Oakland*	1
Parkinson, W. B.,	*Tulare*	35
Parks, F. R.,	*Los Angeles*	9
Parowski, S. A.,	*San Diego*	21
Parrish, G.,	*Los Angeles*	9
Parrott, J. C.,	*San Francisco*	22
Parsons, E. W.,	*San Francisco*	22
Parsons, H. H.,	*San Bernardino*	20
Parsons, J. J.,	*Monrovia*	9
Partch, W. T.,	*Oakland*	1
Pasette, S. E.,	*Los Angeles*	9
Pasmore, J. L.,	*Berkeley*	1
Patek, S. D.,	*San Francisco*	22
Paterson, F. H.,	*Santa Ana*	15
Patrick, M. A.,	*Los Angeles*	9
Patterson, E. A.,	*Oakland*	1
Patterson, G. H.,	*Los Angeles*	9
Patterson, G. L.,	*Santa Rosa*	32
Patterson, J. A.,	*San Bernardino*	20
Patton, E. F.,	*Los Angeles*	9

NAME	CITY	COUNTY SOCIETY NO.
Paul, J. W.,	*Santa Clara*	27
Paul, S. B.,	*San Francisco*	22
Paull, R. A.,	*La Jolla*	21
Paxman, D. G.,	*Oakland*	1
Payton, W. B.,	*Riverside*	17
Pchelkin, N. A.,	*San Francisco*	22
Pearce, C. M.,	*Oakland*	1
Pearce, W. M.,	*Wilmington*	9
Pearl, F. A.,	*Los Angeles*	9
Pearson, B. S.,	*Los Angeles*	9
Pearson, C. A.,	*Turlock*	33
Pearson, E. A.,	*Los Angeles*	9
Pearson, J. A.,	*Los Angeles*	9
Pearson, R. G.,	*Sacramento*	18
Peddicord, H.,	*Redwood City*	25
Peers, R. A.,	*Colfax*	16
Peers, R. S.,	*Oakland*	1
Peery, J. T.,	*Corcoran*	36
Peery, L. T.,	*Berkeley*	1
Peirsol, E. C.,	*Claremont*	9
Pelkan, K. F.,	*San Jose*	27
Peluso, J. D.,	*Los Angeles*	9
Pendergrass, C. I.,	*Clovis*	4
Pendergrass, J. E.,	*Clovis*	4
Pendleton, W. C.,	*Los Angeles*	9
Pendleton, W. R.,	*Long Beach*	9
Pennington, A. S.,	*San Francisco*	22
Peoples, S. Z.,	*Petaluma*	32
Peppers, C. H.,	*Los Angeles*	9
Percy, J. F.,	*Los Angeles*	9
Perkins, W. A.,	*Oakland*	1
Perry, C. G.,	*Sausalito*	10
Perry, J. R.,	*West Hollywood*	9
Perry, O. H.,	*Marysville*	39
Perzik, S. L.,	*Los Angeles*	9
Petch, P. H.,	*Oakland*	1
Peters, C. E.,	*Oakland*	1
Peters, C.,	*San Francisco*	22
Peters, H. E.,	*Pittsburg*	3
Peters, L.,	*Alameda*	1
Petersen, H. E.,	*San Fernando*	9
Petersen, H. C.,	*Stockton*	23
Peterson, E. A.,	*Vallejo*	31
Peterson, F. W.,	*El Centro*	6
Peterson, J. B.,	*Inglewood*	9
Petr, F.,	*Turlock*	33
Petter, R. S.,	*Los Angeles*	9
Pettis, J. H.,	*Fresno*	4
Pettit, A. V.,	*San Francisco*	22
Pettler, S. H.,	*Los Angeles*	9
Petty, C. O.,	*Fullerton*	15
Pfeiffer, H. W.,	*La Mesa*	21
Pflueger, O. H.,	*San Francisco*	22
Phelan, C. A.,	*San Francisco*	22
Phillips, A. D.,	*Sacramento*	18
Phillips, A. L.,	*Santa Cruz*	28
Phillips, C. E.,	*Los Angeles*	9
Phillips, L. F. E.,	*Palo Alto*	27
Phillips, P. T.,	*Santa Cruz*	28
Philp, W. S.,	*Los Angeles*	9
Pickard, R. J.,	*San Diego*	21
Pidcock, J. W.,	*Hollywood*	9
Pier, H. McK.,	*Oakland*	1
Pierce, G. W.,	*San Francisco*	22
Pierce, H. M.,	*Riverside*	17
Pierce, H. F.,	*Santa Barbara*	26
Pierce, R. K.,	*Oakland*	1
Pierce, S. N.,	*Los Angeles*	9
Pierson, P. H.,	*San Francisco*	22
Pillsbury, S. G.,	*Long Beach*	9
Pimental, G. B.,	*Los Banos*	12
Pindell, M. L.,	*Los Angeles*	9
Pindler, L. A.,	*Los Angeles*	9
Piness, G.,	*Los Angeles*	9
Pinkham, C. B.,	*San Francisco*	22
Pinkley, V. M.,	*San Bernardino*	20
Pinney, I.,	*Stockton*	23
Pinto, H. E.,	*Covello*	11
Piper, H. E.,	*Santa Cruz*	28
Pischel, D. K.,	*San Francisco*	22
Pischel, K.,	*San Francisco*	22
Piscitelli, A. M.,	*San Francisco*	22
Pitkin, H. C.,	*San Francisco*	22
Pitts, E. H.,	*Sacramento*	18
Pius, C.,	*Yreka*	30
Plank, T. H.,	*San Francisco*	22
Plath, H. W.,	*Oakland*	1
Platt, J. E.,	*Pasadena*	9
Player, L. P.,	*San Francisco*	22
Pleth, V.,	*Santa Rosa*	32
Plimpton, E. B.,	*Los Angeles*	9
Plymire, D. B.,	*San Francisco*	22
Poage, C. A.,	*Colusa*	38
Podstata, V. H.,	*San Francisco*	1
Polesky, F. A.,	*Los Angeles*	9
Polland, W. S.,	*San Rafael*	10
Pollia, J. A.,	*Los Angeles*	9
Pollock, W. E.,	*Sacramento*	18
Pomeroy, G. T.,	*Yountville*	14
Pomeroy, J. L.,	*Los Angeles*	9
Pond, S. B.,	*Patton*	20
Poole, F. H.,	*Santa Cruz*	28
Poole, R. E.,	*Yountville*	14
Pope, E. W.,	*San Francisco*	22
Pope, S. T., II,	*San Francisco*	22
Pope, W. H.,	*Sacramento*	18
Porter, E. E.,	*San Jose*	27
Porter, E. B.,	*Coronado*	21
Porter, G. S.,	*Los Angeles*	9
Porter, J. A.,	*Modesto*	33
Porter, R. L.,	*San Francisco*	22
Porter, W. S.,	*Oakland*	1
Post, J. O.,	*Los Angeles*	9
Pottenger, F. M.,	*Monrovia*	9
Pottenger, F. M., Jr.,	*Monrovia*	9
Pottenger, J. E.,	*Monrovia*	9
Pottenger, R. T.,	*Monrovia*	9
Potter, C. D.,	*San Francisco*	22
Potter, G.,	*Oakland*	1
Potter, M. J. M.,	*San Diego*	21
Potter, P. S.,	*Berkeley*	1
Potter, W. H.,	*San Diego*	21
Pouppirt, P. S.,	*San Francisco*	22
Powell, A.,	*Oakland*	1
Powell, B. J.,	*Stockton*	23
Powell, B. J., Jr.,	*Stockton*	23
Powell, D. R.,	*Stockton*	23
Powell, R. C.,	*Richmond*	3
Powell, W. A.,	*Richmond*	3
Powers, A. R.,	*Tracy*	23
Powers, R. A.,	*Palo Alto*	27
Pratt, B H.,	*Lemoore*	36
Pratt, E. D.,	*Burbank*	9
Pratt, M. D.,	*Fall River Mills*	29
Pratt, O. B.,	*Los Angeles*	9
Pratt, T. R.,	*Ahwahnee*	12
Premo, M. A.,	*San Jose*	27
Pressley, J. F.,	*San Francisco*	22
Preston, A. W.,	*Visalia*	35
Preuss, C. A.,	*Santa Barbara*	26
Price, J. B. M.,	*Orange*	15
Prien, R. H.,	*Gilroy*	27
Priestley, S. F.,	*Stockton*	23
Priestley, W. F.,	*Oakland*	1
Primasing, R. J.,	*Courtland*	18
Prince, L. D.,	*San Francisco*	22
Prince, R. W.,	*San Bernardino*	20
Prindle, K. H.,	*San Mateo*	25
Pritchard, F. H.,	*Colton*	20
Pritchard, J. L.,	*San Jose*	27
Pritchard, W. F.,	*San Bernardino*	20
Proescher, F.,	*San Jose*	27
Profant, H. J.,	*Santa Barbara*	26
Proudfoot, C. P.,	*San Luis Obispo*	24
Pruett, H. J.,	*San Francisco*	22
Pruett, J. F.,	*San Francisco*	22
Pryor, H. B.,	*San Francisco*	27
Pulford, D. S.,	*Sacramento*	38
Purcell, R.,	*Los Angeles*	9
Purlenky, G. P.,	*Arcata*	5
Pursell, F. J.,	*Los Angeles*	9
Putnam, H. A.,	*Monrovia*	9

— Q —

Quaintance, P. A.,	*Los Angeles*	9
Quarry, P. T.,	*Santa Rosa*	32
Quimby, S. A.,	*Madera*	4
Quinan, C.,	*San Francisco*	22
Quinlan, J. F.,	*San Francisco*	22
Quinn, E. M.,	*Vallejo*	31
Quinn, T. D'A.,	*San Francisco*	22
Quinn, V. J.,	*Los Angeles*	9
Quinn, W.,	*San Francisco*	22
Quinn, W. J.,	*Eureka*	5

— R —

Rabinowitz, R.,	*San Francisco*	22
Rabwin, M. H.,	*Los Angeles*	9
Radford, E. B.,	*Weimar*	16
Ragan, S. T.,	*Hollywood*	9
Railsback, O. C.,	*Woodland*	38
Raitt, G. E.,	*Santa Ana*	15
Rajotte, E. C. F.,	*San Francisco*	22
Rakitin, S. S.,	*San Francisco*	22
Rammelt, W.,	*Los Angeles*	9
Ramsay, R. E.,	*Pasadena*	9
Rand, C. W.,	*Los Angeles*	9
Randall, S. B.,	*Santa Cruz*	28
Randel, H. A.,	*Fresno*	4
Raney, R. B.,	*Los Angeles*	9
Rankin, A. H.,	*San Francisco*	22
Rankin, E. P.,	*Berkeley*	1
Ransom, D. H.,	*Madera*	4
Ransom, J. K.,	*Modesto*	33
Ranson, J. R.,	*San Luis Obispo*	24
Rapaport, H.,	*Los Angeles*	9
Rapaport, W.,	*Oakland*	1
Raphael, J. C.,	*Oakland*	1
Rasor, C.,	*Oakland*	1
Rathbone, R. H.,	*Los Angeles*	9
Rathbun, W. T.,	*Colusa*	38
Ratliff, H. L.,	*Riverside*	17
Ratner, R.,	*San Francisco*	22
Ratty, F. J.,	*San Diego*	21
Raulston, B. O.,	*Los Angeles*	9
Ravitch, M. L.,	*Los Angeles*	9
Rawhauser, J. L.,	*Willows*	38
Rawlins, A. G.,	*San Francisco*	22
Ray, E. B.,	*Bellflower*	9
Ray, F. S.,	*Los Angeles*	9
Ray, H. H.,	*San Mateo*	25
Ray, L.,	*Santa Rosa*	32
Raymond, A.,	*San Francisco*	22
Rea, B. J.,	*Sacramento*	18
Rea, R. R.,	*Los Angeles*	9
Rea, S. L.,	*Ukiah*	11
Rea, T.,	*Yreka*	30
Read, F. T.,	*Glendale*	9
Read, J. M.,	*San Francisco*	22
Ready, F. L.,	*Los Angeles*	9
Ream, G. D.,	*Albany*	1
Ream, M. P.,	*San Leandro*	1
Reamer, E. F.,	*Modesto*	33
Reardon, F. B.,	*Sacramento*	18
Reasner, W. F.,	*Santa Monica*	9
Rebec, W. G.,	*Belmont*	25
Reckers, W. A.,	*Placerville*	18
Redelings, L. H.,	*San Diego*	21
Redewill, F. H.,	*San Francisco*	22
Reed, A. C.,	*San Francisco*	22
Reed, C. C.,	*Compton*	9
Reed, E. N.,	*Santa Monica*	9
Reed, J. R.,	*Pasadena*	9
Reed, W. W.,	*Nevada City*	16
Reeng, J. D.,	*San Francisco*	22
Rees, C. W.,	*San Diego*	21
Rees, C. E.,	*San Diego*	21
Rees, D. M.,	*Monterey Park*	9
Rees, H. C.,	*Los Angeles*	9
Reeves, E. W.,	*Salinas*	13
Reeves, J. M.,	*Oakland*	1
Reeves, J. W.,	*Los Angeles*	9
Reeves, W. R.,	*Salinas*	13
Regan, L. J.,	*Hollywood*	9
Rehfisch, J. M.,	*San Francisco*	22
Reich, A.,	*Palo Alto*	27
Reich, W. W.,	*Berkeley*	1
Reiche, C.,	*Los Angeles*	9
Reichert, F. L.,	*San Francisco*	22
Reid, R. S.,	*Oceanside*	21
Reilly, P. H.,	*Vallejo*	31
Reilly, W.,	*San Francisco*	22
Reilly, W. A.,	*San Francisco*	22
Reinard, L.,	*Los Angeles*	9
Reinertsen, B. R.,	*Los Angeles*	9
Reinle, G. G.,	*Oakland*	1
Reinstein, A. H.,	*San Francisco*	22
Reis, A. G. DeS.,	*Oakland*	1
Reische, A. E.,	*Oakland*	1
Reiss, O.,	*Los Angeles*	9
Reitzel, R. J.,	*Burlingame*	25
Remington, L. D.,	*Monrovia*	9
Rammel, A. J.,	*San Francisco*	22
Remmen, E. T.,	*Glendale*	9
Renner, J. H.,	*Santa Barbara*	26
Renz, C.,	*San Francisco*	22
Ress, I. L.,	*Los Angeles*	9
Rethwilm, L. A.,	*San Francisco*	22
Reud, W. R.,	*Oakland*	1
Rey, H. F.,	*Oxnard*	37
Reynolds, C. E.,	*Venice*	9
Reynolds, H. C.,	*Arlington*	17
Reynolds, L. R.,	*San Francisco*	22
Reynolds, L. G.,	*Los Angeles*	9
Reynolds, P. A.,	*Los Angeles*	9
Reynolds, R. A.,	*San Francisco*	22
Reynolds, T. E.,	*Oakland*	1
Rhodes, G. K.,	*San Francisco*	22
Riach, M. T.,	*San Diego*	21
Rice, C. H.,	*Oakland*	1
Rice, F. M.,	*San Francisco*	22
Rice, P.,	*Los Angeles*	9
Rich, T. C.,	*Ventura*	37
Richards, C. M.,	*San Jose*	27
Richards, D. N.,	*Oakland*	1
Richards, S. B.,	*San Bernardino*	20
Richter, C.,	*Balboa Beach*	15
Richter, I. M.,	*Santa Barbara*	26
Rickabaugh, H. B.,	*Alhambra*	9
Rickard, J. F.,	*San Francisco*	22
Rigdon, R. L.,	*San Francisco*	22
Riggin, L. L.,	*Pasadena*	9
Righetti, E.,	*San Francisco*	22
Righetti, H.,	*San Francisco*	22
Rinkenberger, F. W.,	*Los Angeles*	9
Rinne, F. A.,	*San Francisco*	22
Risley, E. H.,	*Loma Linda*	20
Rixford, E.,	*San Francisco*	22
Roath, C.,	*Los Angeles*	9
Robarts, H. P.,	*San Francisco*	22
Robbins, A. C.,	*Garden Grove*	15
Robbins, A. R.,	*Los Angeles*	9
Robbins, B.,	*Hanford*	36
Robbins, D. R.,	*Los Angeles*	9
Roberg, D. N.,	*San Jose*	27
Roberts, A. M.,	*Los Angeles*	9
Roberts, E. K.,	*Los Angeles*	9
Roberts, G. W.,	*Oakland*	1
Roberts, J. G.,	*Pomona*	9
Roberts, J. M.,	*Los Angeles*	9

NAME	CITY	COUNTY SOCIETY NO.
Roberts, W. H.,	*Pasadena*	9
Robertson, D. L.,	*Modesto*	33
Robertson, G.,	*San Francisco*	22
Robertson, H. R.,	*Los Angeles*	9
Robertson, J. C.,	*Modesto*	33
Robertson, J. W., Jr.,	*Livermore*	1
Robertson, R. R.,	*San Rafael*	10
Robinson, J.,	*Anahcim*	15
Robinson, J. W.,	*Los Angeles*	9
Robinson, L. L.,	*Larkspur*	10
Robinson, S. P.,	*Santa Barbara*	26
Robison, L. H.,	*Los Angeles*	9
Roblee, W. W.,	*Riverside*	17
Rodenbaugh, F. H.,	*San Francisco*	22
Rodin, F. H.,	*San Francisco*	22
Roe, J. N.,	*Riverside*	17
Roger, J. H. D.,	*San Francisco*	22
Rogers, A. M.,	*Los Angeles*	9
Rogers, H. S.,	*Petaluma*	32
Rogers, H.,	*Oakland*	1
Rogers, H.,	*Bakersfield*	7
Rogers, J. A.,	*San Francisco*	22
Rogers, J. B.,	*Imola*	14
Rogers, J. B.,	*Los Angeles*	9
Rogers, L. B.,	*Los Angeles*	9
Rogers, S.,	*Tulare*	35
Rogers, W. G.,	*Los Angeles*	9
Rogers, W. L.,	*San Francisco*	22
Rohlfes, B. J.,	*San Francisco*	22
Rohrbaeher, G. H.,	*Stockton*	23
Roller, C. S.,	*Colusa*	38
Rolph, W. D.,	*National City*	21
Roncovieri, A.,	*San Francisco*	22
Rood, R. S.,	*Davenport*	28
Rood, V. V.,	*Grass Valley*	16
Rook, C. W.,	*Montrose*	9
Roome, C. T.,	*Santa Barbara*	26
Rooney, C. E.,	*Santa Monica*	9
Rooney, H. M.,	*Los Angeles*	9
Roos, A. R.,	*Loma Linda*	20
Roos, D. D.,	*Corona*	17
Root, P. N.,	*Bakersfield*	7
Root, R. R.,	*Corona*	17
Rosanoff, A. J.,	*Los Angeles*	9
Rosaseo, O. L.,	*Saratoga*	27
Rosburg, A. H.,	*San Francisco*	22
Roseoe, A. M.,	*Newman*	33
Rose, H. de W.,	*Sonora*	36
Rose, J. T.,	*Healdsburg*	32
Rose, L. M.,	*Santa Clara*	27
Rosenberg, M. N.,	*Los Angeles*	9
Rosenberger, H. G.,	*Whittier*	9
Rosenblum, D. H.,	*Los Angeles*	9
Rosenblum, H. H.,	*San Francisco*	22
Rosenerantz, E.,	*San Francisco*	22
Rosenfeld, M. H.,	*Los Angeles*	9
Rosenkranz, H. A.,	*Los Angeles*	9
Rosenthal, A. G.,	*San Francisco*	22
Ross, K. F.,	*Los Angeles*	9
Ross, M. A.,	*Los Angeles*	9
Ross, M. H.,	*Los Angeles*	9
Ross, S. G.,	*Pasadena*	9
Ross, V. E.,	*Stockton*	23
Rosson, C. T.,	*Hanford*	36
Rosson, R. W.,	*Tulare*	35
Roth, G. H.,	*Los Angeles*	9
Rothman, P. E.,	*Los Angeles*	9
Rothsehild, M.,	*San Francisco*	22
Rothwell, W. T.,	*Los Angeles*	9
Rover, H. P.,	*Los Angeles*	9
Rowe, A. H.,	*Oakland*	1
Rowe, C. H.,	*Oakland*	1
Rowe, M. J.,	*Norwalk*	9
Rowell, H. N.,	*Berkeley*	1
Rowell, W. A.,	*Crockett*	3
Royer, J. E.,	*Oakland*	1
Royston, E. A.,	*Los Angeles*	9
Rubenstein, I.,	*Los Angeles*	9
Rubin, J. S.,	*Los Angeles*	9
Ruddoek, J. C.,	*Los Angeles*	9
Ruddy, L. W.,	*Sacramento*	18
Rude, A. E.,	*Los Angeles*	9
Ruediger, E. H.,	*San Diego*	21
Ruediger, G. F.,	*Pasadena*	9
Rueter, K.,	*Oakland*	1
Ruff, F. R.,	*Fresno*	4
Ruggles, H. E.,	*San Francisco*	22
Rukke, G. V.,	*Monterey*	13
Rulison, E. T.,	*Sacramento*	18
Rumph, P. E.,	*Orange*	15
Rumwell, M. E.,	*San Francisco*	22
Runckel, G. H.,	*McCloud*	30
Runner, J. F.,	*San Francisco*	22
Rusehe, C. F.,	*Hollywood*	9
Rush, R. C.,	*San Fernando*	9
Russell, E. L.,	*Santa Ana*	15
Russell, F. C.,	*San Diego*	21
Russell, J. A.,	*Auburn*	16
Russell, R.,	*Glendale*	9
Russell, W. W.,	*San Diego*	21
Ruth, E. S.,	*Hollywood*	9
Rutherford, F. de P.,	*Santa Clara*	27
Ryan, A. F.,	*Los Angeles*	9
Ryan, A. J.,	*Vallejo*	31
Ryan, A. M.,	*San Francisco*	22
Ryan, C. D.,	*Beverly Hills*	9
Ryan, F. S.,	*San Jose*	27
Ryan, R. C.,	*San Francisco*	22
Ryder, B. E.,	*Los Angeles*	9
Ryfkogel, H. A. L.,	*San Francisco*	22
Rypins, R. F.,	*San Francisco*	22

— S —

NAME	CITY	COUNTY SOCIETY NO.
Saam, J. G.,	*Oakland*	1
Sabiehi, G. C.,	*Spadra*	9
Safarik, E. S.,	*Los Angeles*	9
Sale, J. J.,	*San Francisco*	22
Salisbury, C. S.,	*Los Angeles*	9
Salomon, E.,	*San Francisco*	22
Salter, N. M.,	*Williams*	38
Sample, T. N.,	*Fresno*	4
Sampson, J. J.,	*San Francisco*	22
Sampson, J. A.,	*Los Angeles*	9
Sampson, M. H.,	*Berkeley*	1
Sampson, P. M.,	*Long Beach*	9
Sampson, W. A.,	*San Francisco*	22
Sanders, R. W.,	*Alameda*	1
Sanderson, G. H.,	*Stockton*	23
Sandholt, J. P.,	*Monterey*	13
Sandie, J.,	*Los Angelcs*	9
Sands, R. A.,	*Ocean Park*	9
Sands, R. L.,	*Santa Monica*	9
Sanford, J. R.,	*Pasadena*	9
Sansum, W. D.,	*Santa Barbara*	26
Sappington, E. E.,	*San Francisco*	22
Sargent, W. B.,	*San Francisco*	22
Sargent, W. H.,	*Oakland*	1
Sartori, H. J.,	*San Francisco*	22
Sasso, J. A.,	*Los Angeles*	9
Sauer, F. J.,	*Los Angeles*	9
Saulsberry, C. E.,	*New Brunswick, New Jersey*	15
Saunders, C. E.,	*San Jose*	27
Savage, P. M.,	*San Bernardino*	20
Savage, S. H.,	*Lancaster*	9
Savage, W. W.,	*San Bernardino*	20
Sawyer, F. E.,	*Oakland*	1
Saylin, G. J.,	*Los Angeles*	9
Saylor, B. F.,	*Redding*	29
Seamell, J. W.,	*Oakland*	1
Seanland, J. M.,	*Agnew*	27
Searboro, E. R.,	*Fresno*	4
Scarborough, R. A.,	*San Francisco*	22
Seatena, F. N.,	*Sacramento*	18
Sehaefer, J. W.,	*Los Angeles*	9
Sehaeffer, R. W.,	*Redondo Beach*	9
Sehaller, W. F.,	*San Francisco*	22
Shallig, D. W.,	*Sacramento*	18
Sehaper, E. A.,	*Keene*	7
Schaupp, K. L.,	*San Francisco*	22
Schefeik, J. F.,	*Los Angeles*	9
Seheier, R. B.,	*San Francisco*	22
Sehell, J. P.,	*San Jose*	27
Schenek, G. F.,	*Los Angeles*	9
Seherfee, J. F.,	*Los Angeles*	9
Sehiffbauer, H. E.,	*Los Angeles*	9
Sehilling, W.,	*San Francisco*	22
Sehlageter, H. J.,	*San Francisco*	22
Sehlappi, J. C.,	*San Diego*	21
Schlotthauer, H. L.,	*Bakersfield*	7
Sehlotthauer, M. Q.,	*Bakersfield*	7
Sehluter, H. F.,	*Sacramento*	18
Schmelz, C. J.,	*Guerneville*	32
Sehmidt, A. E.,	*San Francisco*	22
Sehmidt, D. A.,	*Los Angeles*	9
Sehmidt, D. G.,	*San Quentin*	10
Sehmidt, E. J.,	*Fresno*	4
Sehmitt, E. O. G.,	*San Jose*	27
Schmitt, H. H.,	*Gilroy*	27
Sehmitt, L. S.,	*San Francisco*	22
Sehmoele, J. M.,	*Los Angeles*	9
Sehneider, E. H.,	*Los Angeles*	9
Sehoff, C. E.,	*Sacramento*	18
Sehofield, R. O.,	*Boulder City, Nev.*	16
Seholl, A. J.,	*Los Angeles*	9
Seholtz, M.,	*Los Angeles*	9
Scholz, A. M.,	*Los Angeles*	9
Sehomaker, T. P.,	*San Francisco*	22
Sehoonmaker, G. D.,	*San Francisco*	22
Sehott, H. J.,	*Los Angeles*	9
Sehottstaedt, W. E. R.,	*Fresno*	4
Sehreiber, L. W.,	*Santa Monica*	9
Schroeder, F. B.,	*San Diego*	21
Schroeder, L. A.,	*Los Angeles*	9
Sehlutz, C. E.,	*Castroville*	13
Schultz, H. H.,	*San Francisco*	22
Sehulz, R. L.,	*Los Angeles*	9
Sehulze, M.,	*San Francisco*	22
Sehumaeher, I. C.,	*San Francisco*	22
Schurmeier, H. L.,	*Santa Barbara*	26
Schussler, H., Jr.,	*San Francisco*	22
Schwalenberg, H. R.,	*Santa Barbara*	26
Schwartz, A. H.,	*Los Angeles*	9
Sehwartz, F. L.,	*San Diego*	21
Sehwartzman, H.,	*Oakland*	1
Sehwarz, J.,	*San Francisco*	22
Schwarz, T. E.,	*Oakland*	1
Sehwuehow, W. B.,	*Los Angeles*	9
Seiaroni, G. H.,	*Fresno*	4
Seobee, J. E.,	*Los Angeles*	9
Scoins, W. H.,	*Los Angeles*	9
Seott, A. J., Jr.,	*Los Angeles*	9
Scott, F. L.,	*Los Angeles*	9
Scott, J. T.,	*San Diego*	21
Seott, J. W.,	*Colusa*	38
Scott, R. R.,	*Selma*	4
Seott, W. E.,	*San Francisco*	22
Seovel, R. E.,	*San Francisco*	22
Seudder, R.,	*Fort Bragg*	11
Scudere, S. A.,	*Los Angeles*	9
Seabolt, G. C.,	*South Pasadena*	9
Seals, P. W.,	*Los Angeles*	9
Searls, H. H.,	*San Francisco*	22
Seaver, H. C.,	*Los Angeles*	9
Seavey, M. A.,	*Sacramento*	18
Seawell, J. W.,	*Healdsburg*	32
Sebastian, C. F.,	*Los Angeles*	9
Sedgwiek, V. de M.,	*Long Beach*	9
Seeburt, E. M. P.,	*San Francisco*	22
Seech, S. G.,	*Los Angeles*	9
Seeley, L. J.,	*Fort Jones*	30
Segall, G.,	*Los Angeles*	9
Seiberth, J.,	*Pixley*	35
Seid, M. J.,	*San Francisco*	22
Seiger, H. W.,	*Needles*	20
Seitz, R. P.,	*San Francisco*	22
Seletz, R.,	*Los Angeles*	9
Seligman, L. J.,	*Los Angeles*	9
Sellery, A. C.,	*Long Beach*	9
Sellery, C. M.,	*Los Angeles*	9
Sellew, P. K.,	*Los Angeles*	9
Sellon, G. I.,	*Fullerton*	15
Semenov, H.,	*Los Angeles*	9
Servin, C.,	*Los Angeles*	9
Settle, F. B.,	*Long Beach*	9
Setzler, G. B.,	*Los Angeles*	9
Sevenman, G. W.,	*San Matco*	25
Sevier, E.,	*Sacramento*	18
Sewall, E. C.,	*San Francisco*	22
Seymour, E. C.,	*Olive View*	9
Seymour, J. H.,	*Los Angeles*	9
Shaekford, B. C.,	*Long Beach*	9
Shade, M. A.,	*Oakland*	1
Shafer, F. P.,	*Los Angeles*	9
Shaffer, C. J.,	*Huntington Park*	9
Shafor, H. A.,	*Los Angelcs*	9
Shahoviteh, G. P.,	*Los Angeles*	9
Shambaugh, N. F.,	*Long Beach*	9
Shapiro, N. H.,	*San Francisco*	22
Sharp, G. S.,	*Pasadena*	9
Sharp, J. G.,	*San Francisco*	22
Sharp, R. G.,	*San Diego*	21
Sharpe, O. A.,	*San Francisco*	25
Sharpsteen, J. R.,	*Oakland*	1
Shattinger, C.,	*Los Altos*	27
Shattuck, H. P.,	*Los Angeles*	9
Shaull, E. M.,	*Palo Alto*	27
Shaw, E. B.,	*San Francisco*	22
Shaw, H. N.,	*Los Angeles*	9
Shea, T. T.,	*San Francisco*	22
Shea, W. E.,	*San Francisco*	22
Sheafe, E. V.,	*Oakland*	1
Sheehy, F. T.,	*San Francisco*	22
Sheets, O. B.,	*Los Angeles*	9
Shelby, D. C.,	*Los Angeles*	9
Sheldon, E. C.,	*Hollister*	19
Sheldon, E. F.,	*Los Angeles*	2
Sheldon, E. A.,	*Bellflower*	9
Sheldon, F. B.,	*Stockton*	23
Sheller, W. O.,	*Culver City*	9
Shelton, E. K.,	*Santa Barbara*	26
Shelton, G. C.,	*Los Angelcs*	9
Shenk, F. P.,	*Santa Cruz*	28
Shepard, C. E.,	*Standard University*	27
Shepard, W. P.,	*San Francisco*	22
Shepardson, D. E.,	*San Francisco*	22
Shepardson, H. C.,	*San Francisco*	22
Shephard, J. H.,	*San Jose*	27
Sherman, B. H.,	*Hollywood*	9
Sherman, J.,	*San Francisco*	22
Sherman, R. S.,	*San Francisco*	22
Sherman, S. R.,	*San Francisco*	22
Sherrard, E. E.,	*Los Angeles*	9
Sherrick, J. W.,	*Oakland*	1
Sherrill, J. W.,	*La Jolla*	21
Sherry, L. B.,	*Pasadena*	9
Shidler, G. P.,	*Torrance*	9
Shields, L.,	*Oakland*	1
Shiels, G. F.,	*Redwood City*	25
Shilling, J. W.,	*Los Angeles*	9
Shipley, R. E.,	*Los Angeles*	9
Shipley, W. C.,	*Santa Rosa*	32
Shipman, S. J.,	*San Francisco*	22
Shirk, F. M.,	*La Verne*	9
Shoemaker, H.,	*Los Angeles*	9
Shook, F. M.,	*Oakland*	1
Shore, F. A.,	*Ventura*	37
Shorkley, T. M.,	*Carpinteria*	26
Short, J. E.,	*Los Angeles*	9
Shreek, J. A.,	*Redlands*	20
Shryock, A.,	*Loma Linda*	20
Shufelt, A. A.,	*San Jose*	27
Shulman, L.,	*Los Angeles*	9
Shultz, E. L.,	*Los Angeles*	9
Shumaker, E. K.,	*Los Angeles*	9
Shumaker, P. W.,	*Los Angeles*	9
Shuman, J. W.,	*Los Angeles*	9
Shuman, J. R.,	*Los Angeles*	9

NAME	CITY	COUNTY SOCIETY NO.
Shumate, C. A.,	*San Francisco*	22
Shumate, F. O.,	*San Francisco*	22
Shumate, T. E.,	*San Francisco*	22
Shutes, M. H.,	*Oakland*	1
Siebert, A. A.,	*Oakland*	1
Siefert, A. C.,	*Oakland*	1
Siegmund, F. W.,	*Los Angeles*	9
Sigworth, D. C.,	*Long Beach*	9
Silliman, K. C.,	*Palo Alto*	27
Silverman, D. J.,	*Los Angeles*	9
Silvia, C. A.,	*Gilroy*	27
Simon, E. G.,	*Oakland*	1
Simons, C. G.,	*West Hollywood*	9
Simonds, P. E.,	*Riverside*	17
Simpson, B.,	*San Francisco*	22
Simpson, B. R.,	*San Diego*	21
Sink, W. D.,	*Santa Maria*	26
Sippy, J. J.,	*Stockton*	23
Sirbu, A. B.,	*San Francisco*	22
Sisson, C. E.,	*San Diego*	21
Sisson, M.,	*Oakland*	1
Skaff, J. E.,	*San Francisco*	22
Skaleter, E. A.,	*Los Angeles*	9
Skeel, D. W.,	*Los Angeles*	22
Skillen, J.,	*Olive View*	9
Skilling, L. E.,	*Alameda*	1
Slagerman, V. B.,	*Los Angeles*	9
Slaughter, H. C.,	*Los Angeles*	9
Slavich, J. F.,	*Oakland*	1
Sleeper, K. R.,	*Los Angeles*	9
Slemons, J. M.,	*Los Angeles*	9
Sloan, L. E.,	*Inglewood*	9
Sloan, L. N.,	*Yuba City*	39
Sloan, O. J.,	*Glendale*	9
Sloane, L. O.,	*Los Angeles*	9
Slocum, Y. K.,	*Los Angeles*	9
Smale, G. A.,	*Los Angeles*	9
Small, C. K.,	*Oakland*	1
Smalley, R. B.,	*Willits*	11
Smallwood, W. C.,	*Long Beach*	9
Smart, E. P.,	*Olive View*	9
Smiley, H. W.,	*Indio*	17
Smiley, K. E.,	*Los Angeles*	9
Smitgen, P. H.,	*Los Angeles*	9
Smith, A. C.,	*Oakland*	1
Smith, A. S. J.,	*San Jose*	27
Smith, A. E.,	*Los Angeles*	9
Smith, A. M.,	*Oakland*	1
Smith, B.,	*Los Angeles*	9
Smith, C. L.,	*Maywood*	9
Smith, C. E.,	*San Francisco*	22
Smith, D. V.,	*Long Beach*	9
Smith, D. A.,	*Oakland*	22
Smith, E. D.,	*Santa Barbara*	26
Smith, E. G.,	*Oakland*	1
Smith, E. W.,	*San Francisco*	10
Smith, F. H.,	*San Bruno*	25
Smith, G. F.,	*Los Angeles*	9
Smith, H. L.,	*Fair Oaks*	18
Smith, H. H.,	*Los Angeles*	9
Smith, H. A.,	*Whittier*	9
Smith, H. J.,	*Oakland*	1
Smith, H.,	*Los Angeles*	9
Smith, H. MacV.,	*Santa Ana*	15
Smith, H. G.,	*Palo Alto*	27
Smith, J. J. H.,	*Blythe*	17
Smith, J. L.,	*Los Angeles*	9
Smith, J. K.,	*Bakersfield*	7
Smith, K. B.,	*Oakland*	1
Smith, L. E.,	*Hollister*	19
Smith, L. E.,	*San Bernardino*	20
Smith, M.,	*Los Angeles*	9
Smith, M. H.,	*Hollywood*	9
Smith, N. R.,	*Monterey Park*	9
Smith, R.,	*Los Angeles*	9
Smith, R. D.,	*Pomona*	9
Smith, R. D.,	*San Pedro*	9
Smith, R. K.,	*San Francisco*	22
Smith, R. L.,	*Pomona*	9
Smith, R. L. I.,	*Pasadena*	9
Smith, R. M.,	*Riverside*	17
Smith, R. T.,	*Pomona*	9
Smith, S.,	*Pasadena*	9
Smith, S. K.,	*Oakland*	1
Smith, W. B.,	*Los Angeles*	9
Smith, W. B.,	*San Francisco*	22
Smith, W.,	*Los Angeles*	1
Smith, W. B.,	*Delano*	7
Smithies, H. R.,	*Alameda*	1
Smolt, C. A.,	*Ventura*	37
Smolt, L. P.,	*Ventura*	37
Smylie, R. S.,	*San Diego*	21
Smyth, F. S.,	*San Francisco*	22
Smyth, M. H.,	*Stockton*	23
Smyth, R. J.,	*Cayucos*	24
Smythe, H.,	*Stockton*	23
Snoddy, C. A.,	*Vallejo*	31
Snow, H. L.,	*San Pedro*	9
Snow, W. F.,	*New York, N. Y.*	27
Snure, H.,	*Los Angeles*	9
Snyder, C. C.,	*Pasadena*	9
Snyder, G. S.,	*San Francisco*	22
Sobey, G. L.,	*Paso Robles*	24
Soderstrom, E. M.,	*Chowchilla*	12
Sogemeier, E.,	*San Mateo*	25
Soghor, S.,	*Los Angeles*	9
Sohler, F. E.,	*Healdsburg*	32
Soiland, A.,	*Los Angeles*	9
Solomon, J. C.,	*Los Angeles*	9
Solomon, W. O.,	*Oakland*	1
Somerfield, H. A.,	*San Francisco*	22
Somers, M. R.,	*San Francisco*	22
Sonnenberg, A.,	*San Francisco*	22
Sooy, D. W.,	*San Francisco*	22
Soper, H. V.,	*Los Angeles*	9
Sorauf, B. M.,	*Fresno*	4
Sornsen, A. A.,	*Los Angeles*	9
Sosnowski, K. C.,	*Long Beach*	9
Soto-Hall, R.,	*San Francisco*	22
Spalding, A. B.,	*San Francisco*	22
Spalding, C. H.,	*Richmond*	3
Spalding, J. B.,	*Richmond*	3
Spalding, R. B.,	*San Francisco*	22
Spaulding, A. Q.,	*Santa Barbara*	26
Spaulding, J. M.,	*Los Angeles*	9
Spear, E. B.,	*Los Angeles*	9
Spear, J. L.,	*Santa Rosa*	32
Speer, G. G.,	*Los Angeles*	9
Speik, F. A.,	*Los Angeles*	9
Spencer, G. A.,	*Sacramento*	18
Spencer, R. M.,	*Los Angeles*	9
Sperling, S. N.,	*Los Angeles*	9
Spicer, W. H.,	*Cucamonga*	20
Spiers, H. W.,	*Los Angeles*	9
Sprague, F. M.,	*Fresno*	4
Sprauer, V. J.,	*Los Angeles*	9
Staatz, A. D.,	*Olive View*	9
Stabel, F.,	*Redding*	29
Stabel, J. A.,	*Sacramento*	18
Stadfield, C. G.,	*Hollywood*	9
Stadlinger, K. P.,	*Burbank*	9
Stadtherr, E. F.,	*San Francisco*	22
Stadtmuller, E. S.,	*San Francisco*	22
Stafford, D. D.,	*Alameda*	1
Stafford, H. E.,	*Oakland*	1
Stafford, O. R.,	*Los Angeles*	9
Stahl, W. F.,	*Los Angeles*	9
Stailey, H. D.,	*Beverly Hills*	9
Staniford, K. J.,	*Fresno*	4
Stanley, L. L.,	*San Rafael*	10
Stanton, F. E.,	*Long Beach*	9
Stanton, R. H.,	*Pasadena*	9
Starbird, G. A.,	*King City*	13
Stark, B. W.,	*San Francisco*	22
Stark, J. H.,	*Oakland*	1
Stark, M.,	*Los Angeles*	9
Starks, D. J.,	*San Francisco*	22
Starr, R. W.,	*Los Angeles*	9
Staub, J. S.,	*San Jose*	27
Stauffer, M. L.,	*Pittsburg*	3
St. Clair, R.,	*Oakland*	1
Stealy, C. L.,	*San Diego*	21
Steddom, F. W.,	*Los Angeles*	9
Steele, A. A.,	*Los Angeles*	9
Steele, A. B.,	*Santa Barbara*	26
Steele, E. H.,	*Los Angeles*	9
Steele, J. T.,	*Dunsmuir*	30
Steele, M. T.,	*Los Angeles*	9
Steen, C. E.,	*Brea*	15
Steen, E. J.,	*Fullerton*	15
Steere, R. A.,	*Downey*	9
Steffy, J. L.,	*Santa Monica*	9
Stegeman, W.,	*Crescent City*	5
Stein, J. L.,	*Albany*	1
Stein, W. F.,	*Fresno*	4
Steinberg, J.,	*Los Angeles*	9
Steinmetz, A. F.,	*Hayward*	1
Stellar, R. W.,	*Wilmington*	9
Stephens, B. P.,	*Oakland*	1
Stephens, B. M.,	*Alameda*	1
Stephens, H. W.,	*San Francisco*	22
Stephens, J. S.,	*Los Angeles*	9
Stephens, P. H.,	*Los Angeles*	9
Stephens, W. C.,	*Pasadena*	9
Stephens, W. B.,	*Alameda*	1
Stephenson, H. A.,	*San Francisco*	22
Stevens, C. S.,	*Santa Barbara*	26
Stevens, G. M.,	*Los Angeles*	9
Stevens, J. B.,	*Los Angeles*	9
Stevens, W. L.,	*Baldwin Park*	9
Stevens, W. E.,	*San Francisco*	22
Stevenson, A. P.,	*Torrance*	9
Stevenson, C. C.,	*Oakland*	1
Stevenson, S. L.,	*San Francisco*	22
Stewart, C. W.,	*Hollywood*	9
Stewart, H. B.,	*Ripon*	33
Stewart, H. J.,	*San Diego*	21
Stewart, W.,	*Los Angeles*	9
Stibbens, F. H.,	*Oakland*	1
Stice, T. H.,	*Imola*	14
Stiles, F. E.,	*San Francisco*	22
Stilson, G. D.,	*Long Beach*	9
Stilwell, L. E.,	*Hollywood*	9
Stirewalt, H. W.,	*Concord*	3
Stoddard, C. L.,	*San Diego*	21
Stoddard, J. McC.,	*Beverly Hills*	9
Stoddard, T. A.,	*San Francisco*	22
Stolle, F.,	*Dixon*	31
Stolz, C. E.,	*Los Angeles*	9
Stolz, H. R.,	*Berkeley*	1
Stone, B.,	*San Francisco*	22
Stone, E. M.,	*Oceanside*	21
Stone, R. S.,	*San Francisco*	22
Stone, W. J.,	*Pasadena*	9
Stoops, R. P.,	*Oakland*	1
Storey, T. A.,	*Stanford University*	27
Stork, V. E.,	*Los Angeles*	9
Stoughton, A. V.,	*Claremont*	9
Stovall, L.,	*Los Angeles*	9
Stowe, O. P.,	*Oakland*	1
Strahlmann, L.,	*San Diego*	21
Strange, S. P.,	*San Francisco*	22
Stratford, E. C.,	*Los Angeles*	9
Strathern, H. J.,	*Hollywood*	9
Stratton, E. K.,	*San Francisco*	22
Stratton, G. W.,	*Marysville*	39
Stratton, J. M.,	*Berkeley*	1
Street, L. A. B.,	*Los Angeles*	9
Strickler, D.,	*San Francisco*	22
Strickler, J. P.,	*San Francisco*	22
Striegel, L. McC.,	*Long Beach*	9
Striegel, R. J.,	*Long Beach*	9
Strietmann, W. H.,	*Oakland*	1
Strong, A. J.,	*Santa Paula*	37
Strong, D. C.,	*Upper Lake*	11
Strongin, S.,	*Bakersfield*	7
Struble, H. P.,	*Hayward*	1
St. Sure, F.,	*San Diego*	21
Sturdivant, B. F.,	*Pasadena*	9
Sturgeon, C. T.,	*Los Angeles*	9
Sturges, R. R. L.,	*Los Angeles*	9
Styan, W. E.,	*San Mateo*	25
Sudlow, E. L.,	*San Fernando*	9
Suehs, P. E.,	*San Francisco*	22
Sugar, H.,	*Los Angeles*	9
Sullivan, J. J.,	*Oakland*	1
Sullivan, J. M.,	*San Francisco*	22
Sullivan, N. R.,	*Santa Cruz*	28
Sullivan, W. J.,	*Hollywood*	9
Sulzbacher, C. I.,	*Los Angeles*	9
Sumerlin, H. S.,	*San Diego*	21
Sundberg, R. H.,	*San Diego*	21
Sundin, P. O.,	*Los Angeles*	9
Suski, P. M.,	*Los Angeles*	9
Susnow, D. A.,	*San Francisco*	22
Sutherland, H. M.,	*Berkeley*	1
Sutherland, K. H.,	*Santa Ana*	15
Sutherland, P. R.,	*Los Angeles*	9
Sutherland, R. T.,	*Oakland*	1
Sutherlin, C. G.,	*Los Angeles*	9
Sutton, T. L.,	*Stockton*	23
Svoboda, F. C.,	*San Diego*	21
Swanson, C. F.,	*Los Angeles*	9
Swartz, R. E.,	*San Francisco*	25
Swauger, L. S.,	*Oakland*	1
Swearingen, F. C.,	*Pomona*	9
Sweeney, J. P.,	*Millbrae*	25
Sweet, C. D.,	*Oakland*	1
Sweet, E.,	*Los Angeles*	9
Sweet, R. B.,	*Long Beach*	9
Sweetser, G. W.,	*Martinez*	3
Swett, W. F.,	*San Francisco*	22
Swezey, S.,	*Los Angeles*	9
Swigart, M.,	*Monterey*	13
Swim, W. A.,	*Los Angeles*	9
Swindt, J. K.,	*Pomona*	9
Swinney, R. W.,	*Long Beach*	9
Sylvester, F. M.,	*Oakland*	1
Syman, L. W.,	*Los Angeles*	9
Symonds, C. W.,	*Pasadena*	9
Szukalski, J. P.,	*Pasadena*	9

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Taber, L. E.,	*San Francisco*	22
Talbott, E. M.,	*San Francisco*	22
Talbott, G. M.,	*San Francisco*	22
Talmage, C. H.,	*Sanitarium*	14
Taltavall, W. A.,	*Redlands*	20
Tandowsky, R. M.,	*Pasadena*	9
Tanner, C. O.,	*San Diego*	21
Tarnutzer, B. C.,	*Los Angeles*	9
Tatro, R. F.,	*Loma Linda*	20
Tattersall, K. L.,	*Oakland*	1
Taubles, G. H.,	*San Francisco*	22
Taussig, L.,	*San Francisco*	22
Taylor, D. A.,	*San Francisco*	22
Taylor, E. M.,	*Oakland*	1
Taylor, E. C.,	*San Francisco*	22
Taylor, F. W. H.,	*Los Angeles*	9
Taylor, F. B.,	*Oakland*	1
Taylor, L. H.,	*Oakland*	1
Taylor, P. A.,	*San Francisco*	10
Taylor, R. G.,	*Los Angeles*	9
Taylor, R. T.,	*Los Angeles*	9
Taylor, R. O.,	*San Diego*	21
Taylor, R. N.,	*Long Beach*	9
Teaby, W. L.,	*Monterey*	13
Teass, C. J.,	*San Luis Obispo*	24
Tebbe, F. H.,	*Oakland*	1
Tebbetts, H. E.,	*Whittier*	9
Tebbetts, H. B.,	*Los Angeles*	9
Tedstrom, M. K.,	*Santa Ana*	15
Teel, A. W.,	*Los Angeles*	9

NAME	CITY	COUNTY SOCIETY NO.
Teeter, A. L.,	*Oakland*	1
Teitler, M. H.,	*San Francisco*	22
Templeton, H. J.,	*Oakland*	1
Templeton, W. K.,	*Riverside*	17
Terrill, E. E.,	*Los Angeles*	9
Terry, R. A.,	*Long Beach*	9
Terry, W. I.,	*San Francisco*	22
Thayer, L. E.,	*Los Angeles*	9
Thebaut, M.,	*Oakland*	1
Thelander, H. E.,	*San Francisco*	22
Thelen, E.,	*San Diego*	21
Thibodeau, J. A.,	*San Francisco*	22
Tholen, E. F.,	*Los Angeles*	9
Thomas, B.,	*Oakland*	1
Thomas, B. S.,	*Sacramento*	18
Thomas, H. G.,	*Oakland*	1
Thomas, J. B.,	*Palo Alto*	27
Thomas, R. E.,	*Los Angeles*	9
Thomas, W. C.,	*Long Beach*	9
Thomason, G.,	*Los Angeles*	9
Thomason, S. D.,	*San Dimas*	9
Thompson, A. C.,	*Mountain View*	27
Thompson, A. R.,	*Rio Vista*	31
Thompson, C. P.,	*San Francisco*	22
Thompson, C. V.,	*Pescadero*	25
Thompson, C. V.,	*Lodi*	23
Thompson, C. W.,	*Pasadena*	9
Thompson, E. E.,	*Oakland*	1
Thompson, E. H.,	*Burbank*	9
Thompson, E. E.,	*Red Bluff*	34
Thompson, G. E.,	*Fresno*	4
Thompson, H. A.,	*San Diego*	21
Thompson, H. D.,	*Los Angeles*	9
Thompson, H. L.,	*Los Angeles*	9
Thompson, H. L.,	*Long Beach*	9
Thompson, J. E.,	*Los Angeles*	9
Thompson, K. J.,	*Oakland*	1
Thompson, L. R.,	*San Pedro*	9
Thompson, L. O.,	*San Diego*	21
Thompson, O. E.,	*Riverside*	17
Thompson, R. C.,	*Whittier*	9
Thompson, R. L.,	*Burbank*	9
Thompson, V. P.,	*Los Angeles*	9
Thomson, D.,	*Burbank*	9
Thomson, H. S.,	*San Francisco*	22
Thomson, R. R.,	*Oakland*	1
Thoren, M. E.,	*Weimar*	16
Thornburg, H. D.,	*Hollywood*	9
Thorne, I. W.,	*San Francisco*	22
Thorner, M.,	*Santa Barbara*	26
Thornton, A. J.,	*San Diego*	21
Thornton, J.,	*Los Angeles*	9
Thorpe, A. C.,	*Los Angeles*	9
Thorpe, F.,	*Los Angeles*	9
Thorpe, L. S.,	*Los Angeles*	9
Threlfall, D. R.,	*San Jose*	27
Thurber, F.,	*Hollywood*	9
Thurber, P.,	*Los Angeles*	9
Thuresson, P. F.,	*Riverside*	17
Thurlow, A. A.,	*Santa Rosa*	32
Tiber, L. J.,	*Los Angelcs*	9
Tice, E. W.,	*Los Angeles*	9
Tickell, A. H.,	*Nevada City*	16
Tiffany, D. F. E.,	*San Jose*	27
Tiffany, E. V.,	*Oakland*	1
Tillman, F. J.,	*Fresno*	4
Tillman, T. E.,	*San Francisco*	22
Tillmanns, C.,	*Los Angeles*	9
Tillotson, R. S.,	*Sacramento*	18
Tilton, A. L.,	*Los Angeles*	9
Timme, A. R.,	*Los Angeles*	9
Timon, A. N.,	*Los Angeles*	9
Tippett, G. W.,	*San Francisco*	22
Tipton, S. P.,	*Watsonville*	28
Tisinger, E. L.,	*San Bernardino*	20
Titcomb, L. R.,	*Los Angeles*	9
Titus, C. I.,	*Sacramento*	18
Titus, J. H.,	*Ontario*	20
Tobin, P. A.,	*San Francisco*	22
Tock, E. W.,	*Santa Ana*	15
Todd, H. A.,	*Visalia*	35
Todd, J. B.,	*Los Angeles*	9
Toffelmeier, D. D.,	*Oakland*	1
Toland, C. G.,	*Los Angeles*	9
Tollefson, D. G.,	*Los Angeles*	9
Toller, R. B.,	*Talmage*	11
Tolman, G. P.,	*Watsonville*	28
Tomlinson, R. F.,	*San Francisco*	22
Toner, J. M.,	*San Francisco*	22
Toomey, F. E.,	*San Diego*	21
Topham, E.,	*San Francisco*	22
Torell, G. J.,	*Los Angeles*	9
Torrano, M. A.,	*Oakland*	1
Torre, E. D.,	*San Francisco*	22
Torrens, A. S.,	*Hanford*	36
Torrey, H. B.,	*Stanford University*	27
Tourtillot, W. W.,	*Porterville*	35
Towne, E. B.,	*San Francisco*	22
Townsend, C. E.,	*Los Angeles*	9
Traber, C. H.,	*Reedley*	4
Trainor, J. V.,	*Los Angeles*	9
Trainor, M. E.,	*Los Angeles*	9
Trauner, L. M.,	*San Francisco*	22
Traver, C. M.,	*Patton*	20
Tretheway, L. E.,	*Manteca*	23
Treweek, D. N.,	*Los Angeles*	9
Trewhella, J. S.,	*Montebello*	9
Trimble, H. G.,	*Oakland*	1
Trimmer, E. L.,	*Los Angeles*	9
Trott, L. d'N.,	*Los Angeles*	9
Trotter, A. D.,	*Los Angelcs*	9
Trowbridge, D. H.,	*Fresno*	4
Truax, J. P.,	*Lompoc*	26
True, H. F.,	*Sacramento*	18
Truxaw, J. W.,	*Anaheim*	15
Tucker, H.,	*Agnew*	27
Tucker, H. O.,	*Santa Barbara*	26
Tucker, R. G.,	*Alhambra*	9
Tullar, A. G.,	*Hollywood*	9
Tully, J. J.,	*Stockton*	23
Tunnell, A. M.,	*Novato*	17
Tupper, R. B.,	*Fresno*	4
Turco, E. A.,	*San Jose*	27
Turley, J. G.,	*Los Angeles*	9
Turnbull, F. M.,	*Los Angeles*	9
Turner, E. C.,	*Sacramento*	18
Turner, J. H.,	*Huntington Park*	9
Tuttle, S.,	*San Francisco*	22
Tyler, L. G.,	*San Rafael*	10
Tyroler, F. N.,	*Los Angeles*	9
Twitchell, E. W.,	*San Francisco*	22

— U —

Uhl, G. M.,	*Woodland*	38
Uhls, R. T.,	*Long Beach*	9
Ullmann, H. J.,	*Santa Barbara*	26
Updegraff, H. L.,	*Hollywood*	9
Up de Graff, T. S.,	*Pasadena*	9
Upshaw, H. T.,	*Pasadena*	9
Ussher, N. T.,	*Santa Barbara*	26
Utter, J. W.,	*Anaheim*	15
Uyeyama, H.,	*Oakland*	1

— V —

Vachout, M. A.,	*Southgate*	9
Van Allen, L. K.,	*Ukiah*	11
Vance, H. W.,	*Pasadena*	9
Vance, J. T.,	*Sacramento*	18
Van Cott, W. B.,	*Los Angeles*	9
Van Dalsem, S. B.,	*San Jose*	27
Van Dalsem, W. S.,	*San Jose*	27
Van Den Berg, W. J.,	*Sacramento*	18
Vanderburgh, C. M.,	*Fresno*	4
Van der Leek, P.,	*Stockton*	23
Van Eman, O. H.,	*El Centro*	6
Van Fleet, H. D.,	*Los Angeles*	9
Van Meter, A. L.,	*Stockton*	23
Van Meter, F. J.,	*Norwalk*	9
Van Metre, H.,	*Los Angeles*	9
Van Nuys, R. G.,	*Berkeley*	1
Van Ornum, E. N.,	*Los Angeles*	9
Van Paing, J. F.,	*Santa Barbara*	26
Van Pelt, R. S.,	*Los Angeles*	9
Van Sciver, C. B.,	*Los Angeles*	9
Van Scoyoc, J. G.,	*Los Angeles*	9
Van Sickle, J. R.,	*Santa Monica*	9
Van Soest, E. H.,	*Los Angeles*	9
Van Voorhees, G. T.,	*Lomita*	9
Van Vorhis, J. H.,	*Corcoran*	36
Van Zwalenburg, C.,	*Riverside*	17
Varden, A. E.,	*San Bernardino*	20
Vardon, E. M.,	*Los Angeles*	9
Vaughan, L. B.,	*Long Beach*	9
Vecki, M. E.,	*San Francisco*	22
Vecki, V. G.,	*San Francisco*	22
Vener, H. I.,	*Sawtelle*	9
Venzke, H.,	*Pasadena*	9
Veon, J. E.,	*Bakersfield*	7
Verne, V. E.,	*Long Beach*	9
Viau, B. H.,	*Sanger*	4
Vickerson, J. I.,	*Oakland*	1
Vidrickson, H. L.,	*Weed*	30
Viecelli, J. D.,	*San Francisco*	22
Vieira, E.,	*Sebastopol*	32
Vieira, F. G.,	*Stockton*	23
Vinetz, J. C.,	*Los Angeles*	9
Vinks, W. A.,	*Lincoln*	16
Violc, P. P.,	*Los Angeles*	9
Violett, C. C.,	*Garden Grove*	15
Vischi, G. J. J.,	*Stockton*	23
Visscher, L. G.,	*Los Angeles*	9
Vizzard, W. R.,	*San Francisco*	22
Voight, C. E.,	*San Francisco*	22
Vollert, A. J.,	*San Francisco*	22
Vollmer, A. M.,	*San Francisco*	22
Vollmer, H. W.,	*Sanitarium*	14
von Briesen, H.,	*Los Angeles*	9
Von der Lieth, H. O.,	*San Francisco*	22
von Geldern, H.,	*San Francisco*	22
von Geldern, C. E.,	*Sacramento*	18
von Wedelstaedt, B.,	*Long Beach*	9
Voorhees, H. M.,	*Los Angeles*	9
Voorsanger, W. C.,	*San Francisco*	22
Vowinckel, F. W.,	*San Francisco*	1
Vruwink, J.,	*Los Angeles*	9

— W —

Waddell, D. Q.,	*Los Angelcs*	9
Waddell, W. E.,	*Los Angeles*	9
Wade, L. T.,	*San Luis Obispo*	24
Wade, R. S.,	*Santa Ana*	15
Wagner, A. F.,	*Los Angeles*	9
Wagner, C. R.,	*Pasadena*	9
Wagner, L. D.,	*Pasadena*	9
Wahl, H. A.,	*San Francisco*	22
Wahle, H.,	*Oakland*	1
Wahlen, J. A.,	*Montebello*	9
Waitzfelder, F.,	*Los Angeles*	9
Wakefield, R. F.,	*Pasadena*	9
Walker, A. W.,	*Riverside*	17
Walker, B. F.,	*Fresno*	4
Walker, C. A.,	*San Francisco*	22
Walker, C. B.,	*Los Angeles*	9
Walker, G. W.,	*Fresno*	4
Walker, J. D.,	*Los Angelcs*	9
Walker, J. E.,	*Long Beach*	9
Walker, J. R.,	*Fresno*	4
Walker, M. E.,	*Oakland*	1
Walker, P. J.,	*Los Angeles*	9
Walker, R. A.,	*Alhambra*	9
Walker, R. S.,	*Oakland*	1
Walker, W. H.,	*Willows*	38
Wall, A. S.,	*Los Angeles*	9
Wall, H. W.,	*Hollywood*	9
Wallace, A.,	*Los Angeles*	9
Wallace, C. T.,	*Eureka*	5
Wallace, E. L. R.,	*Los Angeles*	9
Wallace, J. A.,	*Placentia*	15
Wallace, W. S.,	*Orange*	15
Waller, G. P., Jr.,	*Los Angeles*	9
Waller, L. M.,	*Hollywood*	9
Wallerius, R. M.,	*Sacramento*	18
Walrath, G. B.,	*Los Angeles*	9
Walsh, F. D.,	*Oakland*	1
Walsh, J. F.,	*Eureka*	5
Walter, F. J.,	*San Diego*	21
Walters, C. M. C.,	*Los Angeles*	9
Walters, H. S.,	*San Luis Obispo*	24
Walters, P. R.,	*Berkeley*	1
Walton, G. E.,	*Oakland*	1
Walton, H. M.,	*Loma Linda*	20
Walton, R. R.,	*Linwood*	9
Warburton, J. A.,	*Burlingame*	25
Ward, E. K.,	*Oakland*	1
Ward, R.,	*San Francisco*	22
Wardrip, B. H.,	*San Jose*	27
Ware, E. R.,	*Los Angeles*	9
Ware, J. G.,	*Santa Barbara*	26
Warmer, C. A.,	*Los Angeles*	9
Warner, H. E.,	*Los Angeles*	9
Warner, O. H.,	*San Diego*	21
Warnock, A. W.,	*San Pedro*	9
Warren, H. C.,	*Belmont*	25
Warren, J. W.,	*Los Angeles*	9
Warren, J. P.,	*San Francisco*	22
Washburn, W. W.,	*San Francisco*	22
Watanabe, L. M.,	*San Jose*	27
Waters, Z. O.,	*San Francisco*	22
Watkins, L. H.,	*Pasadena*	9
Watson, A. R.,	*Eureka*	5
Watson, F. V.,	*Hollywood*	9
Watson, L. F.,	*Los Angeles*	9
Watson, R. G.,	*Oakland*	1
Watson, T.,	*Sunnyvale*	27
Watters, E. M.,	*Santa Cruz*	28
Watters, H. G.,	*Watsonville*	28
Way, S. C.,	*San Francisco*	22
Wayland, C. A.,	*San Jose*	27
Wayland, C.,	*San Jose*	27
Wayland, R. T.,	*Glendale*	9
Wayte, E. W.,	*Norwalk*	9
Weaver, C. H.,	*Los Angeles*	9
Weaver, D. D.,	*Oakland*	1
Weaver, L. W.,	*Oakland*	1
Webb, A. N.,	*Philadelphia, Pa.*	20
Webber, W. T.,	*Long Beach*	9
Weber, A. L.,	*Upland*	20
Weber, W. L.,	*Los Angeles*	9
Webster, D. P.,	*Fresno*	4
Webster, G. M.,	*Patton*	20
Webster, J. C.,	*Los Angeles*	9
Webster, J. S.,	*Mariposa*	12
Webster, O. L.,	*Holtville*	6
Weddle, C.,	*Dinuba*	35
Wedgewood, P. E.,	*San Diego*	21
Weeks, A.,	*San Francisco*	22
Wegeforth, H. M.,	*San Diego*	21
Weger, G. S.,	*Redlands*	20
Wehrly, J.,	*Santa Ana*	15
Wehrly, W. S.,	*Santa Ana*	15
Weil, S. N.,	*Rodeo*	3
Weinberg, S. L.,	*Los Angeles*	9
Weinberger, J.,	*San Diego*	21
Weiner, W. M.,	*San Francisco*	22
Weirich, E. W.,	*Angels Camp*	23
Weiss, K. F.,	*Visalia*	35
Weitkamp, A. H.,	*Los Angeles*	9
Welbourn, L. S.,	*Van Nuys*	9
Welbourn, M. A.,	*Los Angeles*	9
Welbourn, P. M.,	*Los Angeles*	9

NAME	CITY	COUNTY SOCIETY NO.
Welch, E. H.,	*Pomona*	9
Welch, S. H.,	*Glendale*	9
Welcome, E. H.,	*Downey*	9
Welfer, C. R.,	*Los Angeles*	9
Weller, T. W.,	*Oakland*	1
Wells, C. E.,	*Woodlake*	4
Wells, E. W.,	*Los Angeles*	9
Wells, G. S.,	*Santa Barbara*	26
Wells, M. C.,	*Los Angeles*	9
Wells, S. J.,	*Sacramento*	18
Wells, W. B.,	*Riverside*	17
Welpton, M. A.,	*San Diego*	21
Welsh, O. A.,	*Ventura*	37
Welti, L.,	*Napa*	14
Welty, C. F.,	*San Francisco*	22
Wemple, E. LeR.,	*Verdugo City*	9
Werlich, R. E.,	*San Diego*	21
Werner, E. A. S.,	*Los Angeles*	9
Wessels, A. B.,	*San Diego*	21
Wessels, W. F.,	*Los Angeles*	9
Wesson, M. B.,	*San Francico*	22
West, F. D.,	*Beaumont*	17
West, F. B.,	*Los Angeles*	9
West, H. F.,	*Los Angeles*	9
Weston, F. P.,	*Pasadena*	9
Weston, F. W.,	*Tustin*	15
Westphal, H. G.,	*Glendale*	9
Wetmore, C. T.,	*Berkeley*	1
Weymann, M. F.,	*Los Angeles*	9
Whalman, H. F.,	*Los Angeles*	9
Wheatley, W. G.,	*Azusa*	9
Wheeler, I. A.,	*Cloverdale*	32
Wheelis, J. M.,	*Los Angeles*	9
Whitaker, L. S.,	*San Jose*	27
Whitcomb, E. L.,	*Los Angeles*	9
White, A. S.,	*San Francisco*	22
White, H. L.,	*Red Bluff*	34
White, J. F.,	*San Diego*	21
White, J. H.,	*Chico*	2
White, L. F.,	*Los Angeles*	9
White, P. G.,	*Los Angeles*	9
Whitelock, T. S.,	*San Diego*	21
Whitelock, T. S., Jr.,	*San Diego*	21
Whiting, F. M.,	*Oroville*	2
Whitlow, J. E.,	*Filmore*	9
Whitmer, C. F.,	*Colton*	20
Whitney, J. L.,	*San Francisco*	22
Whittaker, L. F.,	*Huntington Beach*	15
Wickman, H. J.,	*Riverside*	17
Wiebe, D.,	*Selma*	4
Wiebe, F. E.,	*Soledad*	13
Wiebusch, E. G. L.,	*Los Angeles*	9
Wiese, W. F.,	*Fresno*	4
Wilbur, B. C.,	*Palo Alto*	27
Wilbur, R. L.,	*Stanford University*	22
Wilcox, A. B.,	*Santa Barbara*	26
Wilcox, R. W.,	*Long Beach*	9
Wiley, E. H.,	*Los Angeles*	9
Wiley, H. J.,	*Huntington Park*	9
Wilhelm, L. F. X.,	*Los Angeles*	9
Wilken, H. T.,	*Santa Monica*	9
Wilkinson, A. M.,	*Hollywood*	9
Wilkinson, A. J.,	*San Diego*	21
Willard, W. P.,	*San Francisco*	22
Wilcutt, G. H.,	*Ross*	10
Williams, A. H.,	*Carpinteria*	26
Williams, A. J.,	*San Francisco*	22
Williams, C. G.,	*West Los Angeles*	9
Williams, D. B.,	*Colton*	20
Williams, D. B.,	*Evanston, Wyo*	14
Williams, E. H.,	*Los Angeles*	9
Williams, F.,	*San Francisco*	22
Williams, F. F., Jr.,	*Patton*	20
Williams, J. B.,	*Los Angeles*	9
Williams, J. C.,	*San Francisco*	22
Williams, N. H.,	*Los Angeles*	9
Williams, P. M.,	*Los Angeles*	9
Williams, R.,	*Los Angeles*	9
Williams, W. F.,	*Oakland*	1
Williamson, M. A.,	*Lone Pine*	6
Williamson, M. C.,	*Upland*	20
Williamson, N. E.,	*Stockton*	23
Willier, A. F.,	*San Diego*	21
Willis, H. Q.,	*Balboa*	15
Willits, E. K.,	*San Francisco*	22
Wills, C. A.,	*Oakland*	1
Wills, I.,	*Santa Barbara*	26
Willson, L. R.,	*Fresno*	4
Wilmar, A. H.,	*Paso Robles*	24
Wilson, A. D.,	*Palm Springs*	17
Wilson, C. G.,	*Palo Alto*	27
Wilson, C.,	*Los Angeles*	9
Wilson, C. A.,	*Monterey*	13
Wilson, D. R.,	*San Jose*	27
Wilson, G.,	*Sacramento*	18
Wilson, G. W.,	*Los Angeles*	9
Wilson, H. H.,	*Los Angeles*	9
Wilson, H. F.,	*San Francisco*	22
Wilson, H. S.,	*N. Hollywood*	9
Wilson, H. P.,	*Whittier*	9
Wilson, J. D.,	*Berkeley*	1
Wilson, J. B.,	*San Francisco*	22
Wilson, J. C.,	*Los Angeles*	9
Wilson, J. M.,	*Pasadena*	9
Wilson, J. W.	*San Francisco*	22
Wilson, K. R.,	*Santa Barbara*	26
Wilson, L. E.,	*San Francisco*	22
Wilson, W. L.,	*San Jose*	27
Wilson, W. M.,	*Weaverville*	29
Wimp, W. H.,	*Pasadena*	9
Wineberg, A. C.,	*Oakland*	1
Wineland, A. J.,	*Beverly Hills*	9
Wing, L. A.,	*Eureka*	5
Winnard, W. F. R.,	*Los Angeles*	9
Winslow, A. L.,	*Oakland*	1
Winterberg, W. H.,	*San Francisco*	22
Winters, W. P.,	*San Diego*	21
Wiper, T. B.,	*San Francisco*	22
Wise, D. C.,	*Pittsburg*	3
Wise, P. L.,	*San Jose*	27
Wiser, F. C.,	*North Hollywood*	9
Wissner, L. O.,	*Modesto*	33
Witherbee, H. R.,	*Los Angeles*	9
Witherbee, O. O.,	*Los Angeles*	9
Witter, C. B.,	*Los Angeles*	9
Wold, A. P.,	*Oakland*	1
Wolf, G. L.,	*San Francisco*	22
Wolfe, H. H.,	*Fort Bragg*	11
Wolff, E.,	*San Francisco*	22
Wolfram, W. H.,	*Santa Barbara*	26
Wolfsohn, J. M.,	*San Francisco*	22
Wolfsohn, M.,	*Monterey*	13
Wolfson, I. E.,	*Southgate*	9
Woller, W. F.,	*Oakland*	1
Wong, T. A.,	*San Francisco*	22
Wood, C. H.,	*Glendora*	9
Wood, D. A.,	*San Francisco*	22
Wood, D. A.,	*San Francisco*	22
Wood, F. W.,	*Alhambra*	9
Wood, G. J.,	*Calistoga*	14
Wood, G. N., Jr.,	*Palo Alto*	27
Wood, J. A.,	*Anaheim*	15
Wood, J. G.,	*Los Angeles*	9
Wood, L. D.,	*Banning*	17
Wood, R. F.,	*National City*	21
Wood, W. A.,	*Oakland*	1
Woodard, D. S.,	*Watsonville*	28
Woodhull, C. G.,	*Los Angeles*	9
Woodhull, R. A.,	*Los Angeles*	9
Woods, D. L.,	*Los Angeles*	9
Woods, D. K.,	*San Diego*	21
Woods, L.,	*Oakland*	1
Woods, R. A.,	*Los Angeles*	9
Woodward, E. B.,	*Monrovia*	9
Woolf, M. S.,	*San Francisco*	22
Woolfan, E. B.,	*Los Angeles*	9
Woolford, J. S.,	*Eureka*	5
Woolsey, C. H.,	*San Francisco*	22
Woolsey, J. H.,	*Woodland*	38
Workman, R. A.,	*Pacific Grove*	13
Worthington, L.,	*Bakersfield*	7
Wright, B. W.,	*Los Angeles*	9
Wright, C. A.,	*Los Angeles*	9
Wright, F. L.,	*Oakland*	1
Wright, H. J.,	*Healdsburg*	32
Wright, J. M.,	*Pasadena*	9
Wright, La Verne,	*San Francisco*	22
Wright, W. B. Jr.,	*Long Beach*	9
Wright, W. M.,	*Los Angeles*	9
Wrigley, G. C.,	*Sonora*	36
Wrinkle, G. S.,	*Talmage*	11
Wyckoff, H. A.,	*San Francisco*	22
Wyers, R. E.,	*Spadra*	9
Wylie, C. A.,	*San Bernardino*	20
Wymore, W. W.,	*San Francisco*	22
Wynns, H. le R.,	*Berkeley*	1
Wythe, M.,	*Oakland*	1

—Y—

Yabroff, S. W.,	*Oakland*	1
Yaker, D. N.,	*Los Angeles*	9
Yamao, E.,	*Walnut Grove*	18
Yeagle, R. P.,	*Santa Ana*	15
Yerxa, C. W.,	*Los Angeles*	9
Yoakam, F. A.,	*Moorpark*	37
Yocum, F. W.,	*San Luis Obispo*	24
Yoell, R. A.,	*San Francisco*	22
Yost, F. O.,	*Los Angeles*	9
Young, B. A.,	*Long Beach*	9
Young, C. S.,	*Los Angeles*	9
Young, D. D.,	*Los Angeles*	9
Young, E. N.,	*San Diego*	21
Young, F. B.,	*Long Beach*	9
Young, J. W.,	*Beverly Hills*	9
Young, J. H.,	*San Diego*	21
Young, N. A.,	*Walnut Park*	9
Young, P. G.,	*Sacramento*	18
Young, R. A.,	*Oakland*	1

—Z—

Zaiser, H. E.,	*Orange*	15
Zanger, H. G.,	*San Jose*	27
Zeff, M. G.,	*Berkeley*	1
Zeiler, A. H.,	*Los Angeles*	9
Zeiler, J.,	*Los Angeles*	9
Zeimer, I. S.,	*Stockton*	23
Zelinsky, F.,	*Los Angeles*	9
Ziegelman, E. F.,	*San Francisco*	25
Zimmerer, S. R.,	*Mecca*	17
Zimmerman, H.,	*Sacramento*	18
Zimmerman, H. H.,	*Red Bluff*	34
Zimmermann, W. T.,	*Los Angeles*	9
Zirker, D. W.,	*Merced*	12
Zirkle, T. I.,	*Loma Linda*	20
Ziskind, E.,	*Los Angeles*	9
Zobel, A. J.,	*San Francisco*	22
Zochert, L. W.,	*La Mesa*	21
Zorb, G. A.,	*Los Angeles*	9
Zumwalt, E. R.,	*Tulare*	35
Zumwalt, F. H.,	*San Francisco*	22
Zumwalt, R. S.,	*San Francisco*	22

II. ASSOCIATE MEMBERS

Godfrey, E. B.,	*San Bernardino*	20
Leake, C. D.,	*San Francisco*	22
Mosher, C. D.,	*Stanford University*	27
Rusk, G. Y.,	*San Francisco*	22
Weiss, C.,	*San Francisco*	22

III. HONORARY MEMBERS

Gill, A. F.,	*Banning*	9
Goodenow, N. H.,	*Monrovia*	9
Harris, H.,	*San Francisco*	22
Hermann, A. J.,	*Los Angeles*	9
Kalb, G. B.,	*Monrovia*	9
Kellogg, F. B.,	*Santa Monica*	9
King, J. C.,	*Riverside*	17
Liliencrantz, A.,	*Oakland*	1
Perry, W. F.,	*Los Angeles*	9
Sanders, A. O.,	*Palo Alto*	9
Shawhan, R. C.,	*Otten, N. C.*	9
Sill, E. R.,	*Oakland*	1
Stillman, S.,	*San Francisco*	22
Utley, J. H.,	*Beverly Hills*	9

IV. RETIRED

Allen, F. M.,	*San Diego*	21
Baker, C. Le B. J.,	*Point Loma*	21
Baker, F.,	*Point Loma*	21
Baumeister, E. E.,	*San Francisco*	2
Bogue, H. A.,	*Ontario*	20
Browning, C. C.,	*Los Angeles*	9
Bryan, E. H.,	*Auburn*	16
Cohn, D.,	*San Francisco*	22
Davis, B.,	*Los Gatos*	12
DePuy, E. S.,	*Oakland*	1
Doig, R. L.,	*San Diego*	21
Dunsmoor, N. C.,	*Los Angeles*	9
Francis, L. H.,	*Cotati*	32
Frederick, M. W.,	*Brentwood*	22
Gatchell, W. Le F.,	*Chico*	2
Goodman, E.,	*San Francisco*	22
Goodridge, H. A.,	*San Jose*	27
Gray, F. P.,	*San Francisco*	22
Grissim, J. D.,	*Oakland*	1
Gunn, Herbert,	*San Francisco*	22
Hatch, W. G.,	*Santa Cruz*	28
Henderson, J. J.,	*San Mateo*	22
Hennemuth, J. L.,	*Modesto*	33
Hogan, J. J.,	*Vallejo*	22
Kahn, A. J.,	*San Francisco*	22
Lawhead, H. D.,	*Woodland*	38
Lorini, R.,	*Paris, France*	21
MacDonald, E. A.,	*Beverly Hills*	20
MacLaughlin, W. E.,	*Los Angeles*	9
March, W. B.,	*Burson*	23
McClenahan, H. C.,	*San Francisco*	22
McDaniel, J. L.,	*San Fernando*	9
McKee, A. B.,	*San Francisco*	22
McVey, C. L.,	*Oakland*	1
Newman, H. P.,	*San Diego*	21
Parker, P. J.,	*San Diego*	21
Power, H.,	*Palo Alto*	27
Richter, C. M.,	*San Francisco*	22
Rothganger, G.,	*Oakland*	1
Sampson, A. F.,	*San Francisco*	22
Siebe, E. B.,	*San Francisco*	22
Simmons, G. C.,	*Inverness*	18
Simmons, S. E.,	*Berkeley*	18
Smith, J. F.,	*San Francisco*	22
Somers, H.,	*Morgan Hill*	22
Taylor, M. C.,	*Martinez*	23
Wall, A. S.,	*Los Angeles*	9
Waller, J. L.,	*San Francisco*	22
Ward, M. W.,	*Woodland*	38
Waterman, H. J.,	*Berkeley*	22
Wheeler, J. S.,	*Santa Cruz*	16
Whiffen, R. A.,	*San Jose*	27
Williams, E. H.,	*Norwalk, Conn*	22
Winslow, T. H.,	*Oakland*	1
Yager, W. L.,	*Los Angeles*	9
Yates, E. M.,	*Santa Rosa*	32
Zussman, S.,	*San Francisco*	22

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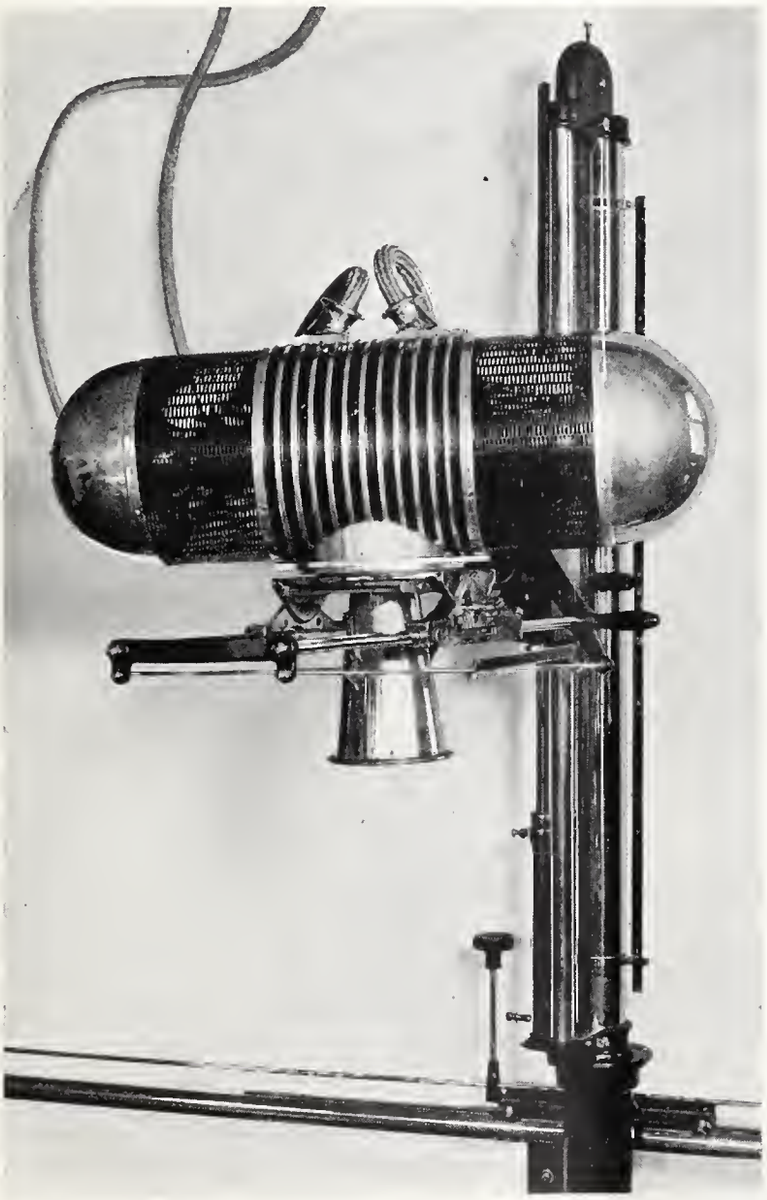

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Editor—George H. Kress, 945 Roosevelt Building, 727 West Seventh Street, Los Angeles.

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Fifth District—Monterey, San Benito, San Mateo, Santa Clara and Santa Cruz Counties, Alfred L. Phillips (1936), Farmers and Merchants Bank Building, Santa Cruz.

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Seventh District—Alameda and Contra Costa Counties, Oliver D. Hamlin (1935), Federal Realty Building, Oakland.

Eighth District—Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Sutter, Tehama, Yolo, and Yuba Counties, C. E. Schoff (1936), 322 Medico-Dental Building, 1127 Eleventh Street, Sacramento.

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T. Henshaw Kelly (1936), 830 Medico-Dental Building, 490 Post Street, San Francisco.

Junius B. Harris (1937), Medico-Dental Building, 1127 Eleventh Street, Sacramento.

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The President, the President-elect, the Speaker of the House of Delegates, the Chairman of the Council, the Chairman of the Auditing Committee, the Chairman of the Committee on Public Relations, the Secretary-Treasurer and the Editor. (Karl L. Schaupp, chairman; Emma W. Pope, secretary.)

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Karl L. Schaupp (Chairman)	San Francisco	1934

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Clifford Sweet	Oakland	1935
William H. Geistweit	San Diego	1936
William W. Roblee (Chairman)	Riverside	1937

Committee on Extension Lectures

James F. Churchill	San Diego	1935
J. Homer Woolsey	Woodland	1936
Robert T. Leggee (Chairman)	Berkeley	1937

Secretary ex officio

Committee on Health and Public Instruction

Fred B. Clarke (Chairman)	Long Beach	1935
W. R. P. Clark	San Francisco	1936
Benjamin W. Black	Oakland	1937

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Charles D. Ball	Santa Ana	1935
J. Marion Read	San Francisco	1936
George D. Lyman (Chairman)	San Francisco	1937

Secretary ex officio
Editor ex officio

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Daniel Crosby (Chairman)	Oakland	1936
Karl L. Schaupp	San Francisco	1937

Committee on Industrial Practice

Morton R. Gibbons (Chairman)	San Francisco	1935
Mott H. Arnold	San Diego	1936
Harry E. Zaiser	Orange	1937

Committee on Medical Defense

George G. Reinle (Chairman)	Oakland	1935
Fred R. De Lappe	Modesto	1936
John P. Nuttall	Santa Monica	1937

Committee on Medical Economics

John H. Graves (Chairman)	San Francisco	1935
William R. Molony, Sr.	Los Angeles	1936
Willard Stone	Pasadena	1937

Committee on Medical Education and Medical Institutions

George Dock	Pasadena	1935
Loren R. Chandler (Chairman)	San Francisco	1936
John B. Doyle	Los Angeles	1937

Committee on Membership and Organization

Harry H. Wilson (Chairman)	Los Angeles	1935
Dewey R. Powell	Stockton	1936
Thomas H. McGavack	San Francisco	1937

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E. T. Remmen	Glendale	1937

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F. M. Pottenger	Monrovia	1936
Lemuel P. Adams	Oakland	1937

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William P. Kroger, Secretary of Section on General Surgery, ex officio

Emma W. Pope (Chairman), ex officio

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Morton R. Gibbons.....Chair., Com. on Industrial Practice
Harry H. Wilson....Chair., Com. on Membership and Organization
John H. Graves.....Chair., Com. on Medical Economics
Junius B. Harris....Chair., Com. on Public Policy and Legislation
Charles A. Dukes.....Chair., Cancer Commission
Clarence G. Toland.....President of California Medical Association
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Communications for the Public Relations Department should be addressed to the Director, Dr. Walter M. Dickie, Room 2008, 450 Sutter Street, San Francisco.

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A. Herman Zeiler	Los Angeles	1935
Gertrude Moore	Oakland	1935
Harold Brunn	San Francisco	1936
Henry J. Ullmann	Santa Barbara	1936
Clarence G. Toland	Los Angeles	1936
Charles A. Dukes (Chairman)	Oakland	1937
Lyell C. Kinney (Vice-Chairman)	San Diego	1937
Alson R. Kilgore (Secretary)	San Francisco	1937

Communications for the Cancer Commission should be addressed to the secretary, A. R. Kilgore, M. D., Room 2008, 450 Sutter Street, San Francisco.

(Roster lists continued on advertising page 4)

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Precautions Necessary in the Preparation and Sale of Cream-Filled Pastries.—Cream-filled pastries, such as cream puffs, chocolate eclairs, and cream pies, are a delicacy which many people enjoy, and which until quite recently have not been considered a source of danger to the consumer. Within the last few years, however, several outbreaks of food poisoning have been traced to their consumption. The custard filling is an excellent medium for the development of numerous species of bacteria and, during the summer season in particular, care should be exercised in the proper handling and refrigeration of these products.

Scrupulous cleanliness is essential in each step of their preparation. Of prime importance is the personal hygiene of the bakers and of others who have occasion to handle them. Under no circumstances should an individual who has lesions, such as boils on his hands or forearms, be permitted to engage in work of this nature. Also, the bakery should be so constructed and screened that rats, mice, and other vermin, particularly flies, will be excluded. The development in such food materials of some of the flora found in the discharges of man and animals, and of certain strains of staphylococci, may produce highly toxic substances.

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Secretary, John M. Graves, 430 Medical Building, 909 Hyde Street, San Francisco.

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Vice-Chairman, Dean E. Godwin, 800 Professional Building, Long Beach.
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President, James A. Parker, Merced.
Secretary, Fred O. Lien, Shaffer Building, Merced.

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Secretary, M. M. Booth, 1379 Main Street, St. Helena.

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Secretary, T. A. Card, Glenwood Block, Riverside.

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Secretary, Frank W. Lee, 510 Physicians Building, 1027 Tenth Street, Sacramento.

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Secretary, L. E. Smith, Hollister.

San Bernardino County Medical Society
President, C. L. Emmons, 206 Emmons Building, Ontario.
Secretary, E. J. Eytinge, 47 East Vine Street, Redlands.

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President, Ross S. Carter, 1870 Fourth Avenue, San Diego.
Secretary, O. S. Harbaugh, 1003 Medico-Dental Building, 233 A Street, San Diego.

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Secretary, Mary Jones-Mentzer, 2180 Washington St., San Francisco.

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Secretary, Allen F. Gillihan, San Luis Obispo.

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Secretary, H. H. Ray, 23 Second Avenue, San Mateo.

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Secretary, Samuel B. Randall, Farmers and Merchants Natl. Bank Bldg., Santa Cruz.

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Secretary, J. Roger U. Campbell, Dunsmuir.

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Secretary, F. J. Bailey, Red Bluff.

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President, Donald C. Fowler, 111 South E Street, Exeter.
Secretary, Karl F. Weiss, Security First National Bank Building, Visalia.

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President, Charles A. Smolt, Box F. 1, Ventura.
Secretary, Fred A. Shore, 704 East Santa Clara Street, Ventura.

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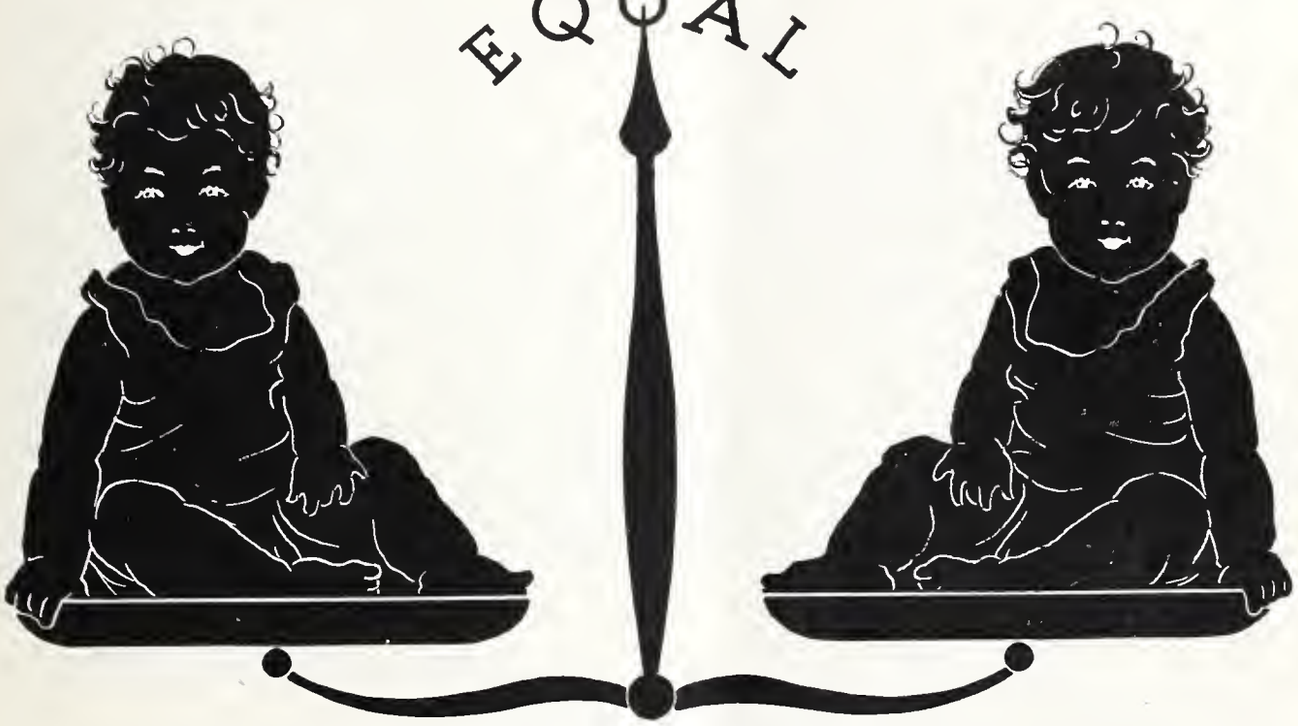
President, James D. Edmundson, 477 Walker Street, Orland.
Secretary, G. W. Desrosier, Colusa.

Yuba-Sutter County Medical Society
President, T. E. Larner, I. O. O. F. Building, Marysville.
Secretary, Fred W. Didier, Wheatland.

(Roster lists continued on advertising page 6)

THE SCALES MAY LIE!



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DRYCO builds substantial babies. Twenty years of clinical reports have proven this. Its greater protein and mineral content tend towards optimum nutrition . . . particularly valuable in the stages of rapid growth. DRYCO's low (yet ample) fat content aids easy and rapid digestion and assimilation, even in cases where food concentration is necessary.

The Vitamins are practically unimpaired. Vitamin "D" is abundantly supplied to DRYCO by irradiation.

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Case reports and samples on request.

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Corresponding Secretary, Mrs. H. Waldo Spiers, 857 South Windsor Boulevard, Los Angeles.

Treasurer. Mrs. F. N. Scatena, 1400 Forty-first Street, Sacramento.

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Contra Costa County—President, Mrs. M. L. Fernandez, Pinole.

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C. A. Dukes, Oakland	(1935-1936)	Edward N. Ewer, Oakland
Clarence G. Toland, Los Angeles	(1935-1936)	Edward M. Pallette, Los Angeles
Junius B. Harris, Sacramento	(1935-1936)	John Hunt Shepard, San Jose
William R. Molony, Sr., Los Angeles	(1935-1936)	John C. Ruddock, Los Angeles

Miscellaneous California Medical Organizations

State of California Department of Public Health

San Francisco—State Office Building, McAllister and Larkin Streets. UNderhill 8700.

Sacramento—State Office Building, Tenth and L Streets. CApital 2800.

Los Angeles — State Office Building, 217 West First Street. MAdison 1281.

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Director, J. D. Dunshee, San Francisco.

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Los Angeles, 812 Associated Realty Building
510 West Sixth Street
Sacramento, 420 State Office Building

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Secretary, C .B. Pinkham, Room 512, 450 McAllister Street, San Francisco.

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Hospitals and Sanatoriums

The Institutions here listed have announcements in this issue of California and Western Medicine. For Index, see advertising page 8.

ALEXANDER SANITARIUM
Nervous and Mild Mental Diseases
Belmont, California

CALIFORNIA SANITARIUM
For Treatment of Tuberculosis
Belmont, California

CANYON SANATORIUM
For the Treatment of Tuberculosis
Redwood City, California

COLFAX SCHOOL FOR THE TUBERCULOUS
For the Treatment of Tuberculosis
Colfax, California

COMPTON SANATORIUM AND LAS CAMPANAS HOSPITAL, COMPTON
Neuropsychiatric and General

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Van Ness and Broadway, San Francisco

FRANKLIN HOSPITAL
Limited General Hospital
Fourteenth and Noe Streets, San Francisco

FRENCH HOSPITAL
General Hospital
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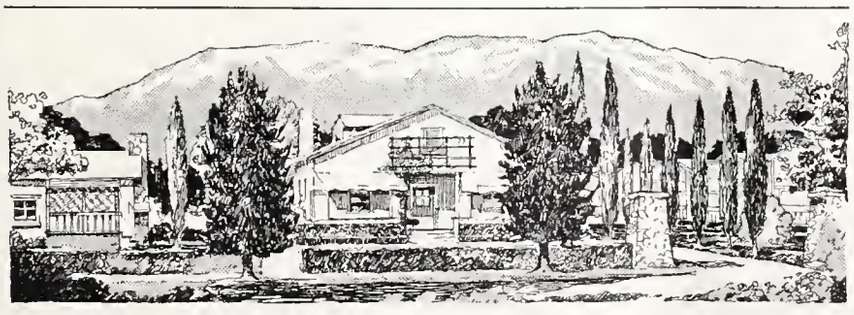

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Plessner Klin. Woch. 53:25 (Jan. 3, 1916). Oljenick: J.A.M.A. p. 1088 (Oct. 13, 1928). Glaser: J.A.M.A. 96:916 (March 21, 1931. Duffield-Fahy: Dental Cosmos (Sept., 1931). Taylor, A. S.: Am. J. Surgery: XX:699 (June, 1933).

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Psittacosis Regulations Tightened. — At a meeting of the State Board of Public Health held February 10, 1934, it was determined that only those shell parrakeets can be sold, offered for sale, trade or barter within the state of California that have been bred in aviaries found by laboratory tests to be free from psittacosis infection. In other words, shell parrakeets sold within the state of California must meet the same requirements as those accepted for shipment to other states.

The department has been advised by the State Department of Health of Maine that on and after March 1, 1934, no shell parrakeets can be sold or transported in that state. Connecticut, Minnesota, Oregon, and Hawaii have similar regulations.

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BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

The Social Adjustment of the Tuberculous. By Beulah Weldon Burhoe. Rehabilitation Secretary, National Tuberculosis Association. Paper. Pp. 55. Price, 50 cents. New York: National Tuberculosis Association, 1934.

Collected Papers of the Mayo Clinic and the Mayo Foundation. Volume XXV (Papers of 1933—Published 1934). Edited by Mrs. Maud H. Mellish-Wilson and Richard M. Hewitt, B. A., M. A., M. D. Cloth. Pp. 1230, with 210 illustrations. Price, $11.50 net. Philadelphia and London: W. B. Saunders Company, 1934.

Corrective Physical Education. By Josephine Langworthy Rathbone, M. D., Instructor in Physical Education, Teachers College, Columbia University, New York City. Cloth. Pp. 292, with 153 illustrations. Price, $2.50 net. Philadelphia and London: W. B. Saunders Company, 1934.

Modern Clinical Syphilology. By John H. Stokes, M. D., Duhring Professor of Dermatology and Syphilology, University of Pennsylvania; Member, Commission on Syphilis and Cognate Diseases, League of Nations Health Organization. Second edition, revised and entirely reset. Cloth. Pp. 1400 with 973 illustrations and text figures. Price, $12 net. Philadelphia and London: W. B. Saunders Company, 1934.

The Essentials of Physical Diagnosis. By Robert W. Buck, M. D., Assistant Professor of Preventive Medicine and Instructor in Physical Diagnosis, Tufts College Medical School, Physician to Boston Dispensary. Cloth. Pp. 259 with 21 illustrations. Price, $3 net. Philadelphia and London: W. B. Saunders Company, 1934.

International Clinics. A Quarterly of Illustrated Clinical Lectures and especially prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other Topics of Interest. By leading members of the medical profession throughout the world. Edited by Louis Hamman, M. D., Visiting Physician, Johns Hopkins Hospital, Baltimore, Md. Volume II, Forty-fourth Series, 1934. Cloth. Pp. 317, illustrated. Philadelphia: J. B. Lippincott Company, 1934.

A Textbook of Pharmacology and Therapeutics or the Action of Drugs in Health and Disease. By Arthur R. Cushny, M. A., M. D., LL. D., F. R. S., Late Professor of Materia Medica and Pharmacology in the University of Edinburgh. Tenth edition, thoroughly revised by C. W. Edmunds, A. B., M. D., Professor of Materia Medica and Therapeutics in the University of Michigan, Ann Arbor, and J. A. Gunn, M. A., M. D., D. Sc., Professor of Pharmacology in the University of Oxford, Oxford, England. Cloth. Pp. 786, illustrated with 75 engravings. Price, $6.50. Philadelphia: Lea & Febiger, 1934.

Obstetric Medicine. The Diagnosis and Management of the Commoner Diseases in Relation to Pregnancy. Edited by Fred L. Adair, M. A., M. D., F. A. C. S., Mary Campau Ryerson, Professor of Obstetrics and Gynecology; Chairman, Department of Obstetrics and Gynecology, University of Chicago; and Edward J. Stieglitz, M. S., M. D., F. A. C. P., Assistant Clinical Professor of Medicine, Rush Medical College of the University of Chicago. Cloth. Pp. 743, illustrated. Price, $8. Philadelphia: Lea & Febiger, 1934.

BOOK REVIEWS

A Diabetic Manual for the Mutual Use of Doctor and Patient. By Elliott P. Joslin. Fifth edition. Pp. 224. Philadelphia: Lea & Febiger, 1934. Price, $2.

This manual of diabetes, designed for both patient and physician, has recently again been revised by Joslin and his co-workers. The revision consists in adding various ideas which conform to the present concepts of diabetes mellitus, upon an already sound foundation.

The book contains twenty-seven chapters. Under appropriate headings, the disease is reviewed in simple understandable language. In addition the cause and treatment of those important complications, coma and gangrene, are explained. Also such adjuvants to treatment as adequate care of the teeth, care of the feet, and general hygiene of the diabetic patient are discussed. Finally there are appended food tables and a selected group of laboratory tests useful in diabetic treatment.

The information and advice contained in this concise book on diabetes is extremely sound, and because of the simplicity of presentation it is, in the reviewer's opinion, the best of the diabetic manuals. H. C. S.

Mental Hygiene in the Community. By Clara Basset. Pp. 394. New York: The Macmillan Company, 1934. Price, $3.50.

This is a description of the work of mental hygiene in its various relations; for example, in relation to general medicine, to nursing, to the social service agencies and

(Continued on Next Page)

NEW MEDICAL BOOKS

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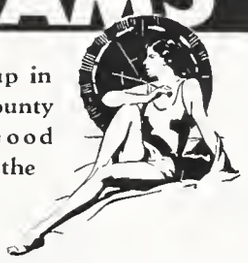

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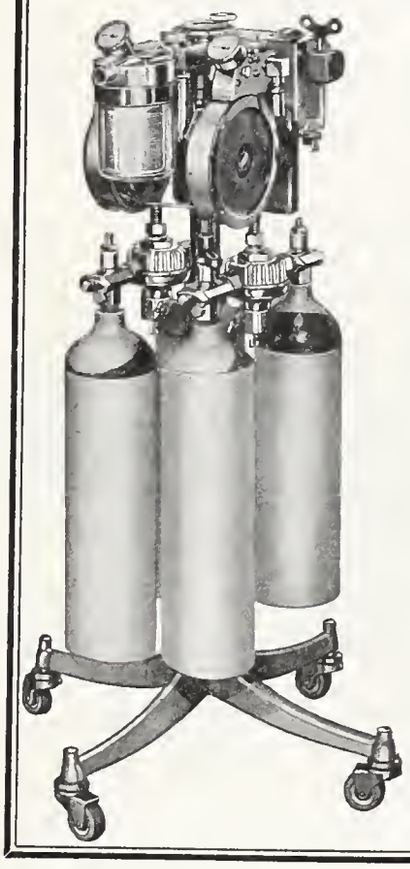

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BOOK REVIEWS

(Continued from Preceding Page)

to the delinquencies in their conflict with the law. Further than this, it takes up the question of the child at home and at school, and education and training of teachers.

There is likewise a chapter on the church and theological training. Finally there are chapters on mental hygiene and its relation to industry, with a description of the various institutions concerned with psychiatric work throughout the United States.

It has a good index and a two-page bibliography. The book gives an excellent idea of the present status of mental hygiene in this country. E. W. T.

Modern Clinical Psychiatry. By Arthur P. Noyes. Pp. 485. Philadelphia and London: W. B. Saunders Company, 1934.

This is an excellent book for the average physician or student. It gives a very good idea of our present-day knowledge of psychiatry, without showing any striking individualism. There is no tendency to emphasize the idea of any particular group while at the same time all such ideas have been judiciously considered.

The chapter on the psychopathic personality, though short, is yet much more nearly adequate than is the average treatment of the subject in textbooks of this size.

The bibliographies at the ends of chapters are extensive enough to lead the student as far as he may like to go and there is a good index. E. W. T.

TWENTY-FIVE YEARS AGO

(Continued from Text Page 72)

tain very definite functions of the animal economy easily demonstrable by experimentation. . . .

. . . The relation of the sympathetic nervous system to the glands of internal secretion is of great interest. . . . A portion of the nervous system, as is known, governs principally the vegetative functions; another, the functions of the heart, of the intestines, and the metabolism. Since glands of internal secretion control the internal metabolism, it is to be expected, *a priori,* they will control also these portions of the nervous system.

From an article on "The Malaria Zone" by F. D. Ray, M. D., Stockton.

The San Joaquin Valley, California, at one time, doubtless, was quite generally infected with malaria and merited the application "malaria zone," but now, showing as it does a 2 per cent mortality rate from the disease, will medical men continue to apply the vesicating term "malaria zone"? Thirty years ago the disease prevailed in this, my home city (Stockton, California), epidemically. It is now practically free from it, as the following report of a mosquito survey, which was made two years ago, will demonstrate. . . .

From an article on "Local Anesthesia" by V. G. Clark, M. D., San Diego.

The use of local anesthesia, especially in America, has until recent years been relegated to an extremely limited field. In 1905 Braun of Leipsic published a book on the subject, and in the United States the work of Matas, Cushing and Crile, together with the clinical experience and articles of Bodine, Mitchell, and others, has done much to place this method of obtunding pain during surgical procedures on a more popular basis with the profession in general. . . .

From an article on "Our State Board Examination" by H. D'Arcy Power, M. D., San Francisco.

The subject of the medical license to practice has long been debated in the state, and recent events have lent more than usual warmth to the discussion. The charges concerning the August examination, the long

(Continued on Page 14)

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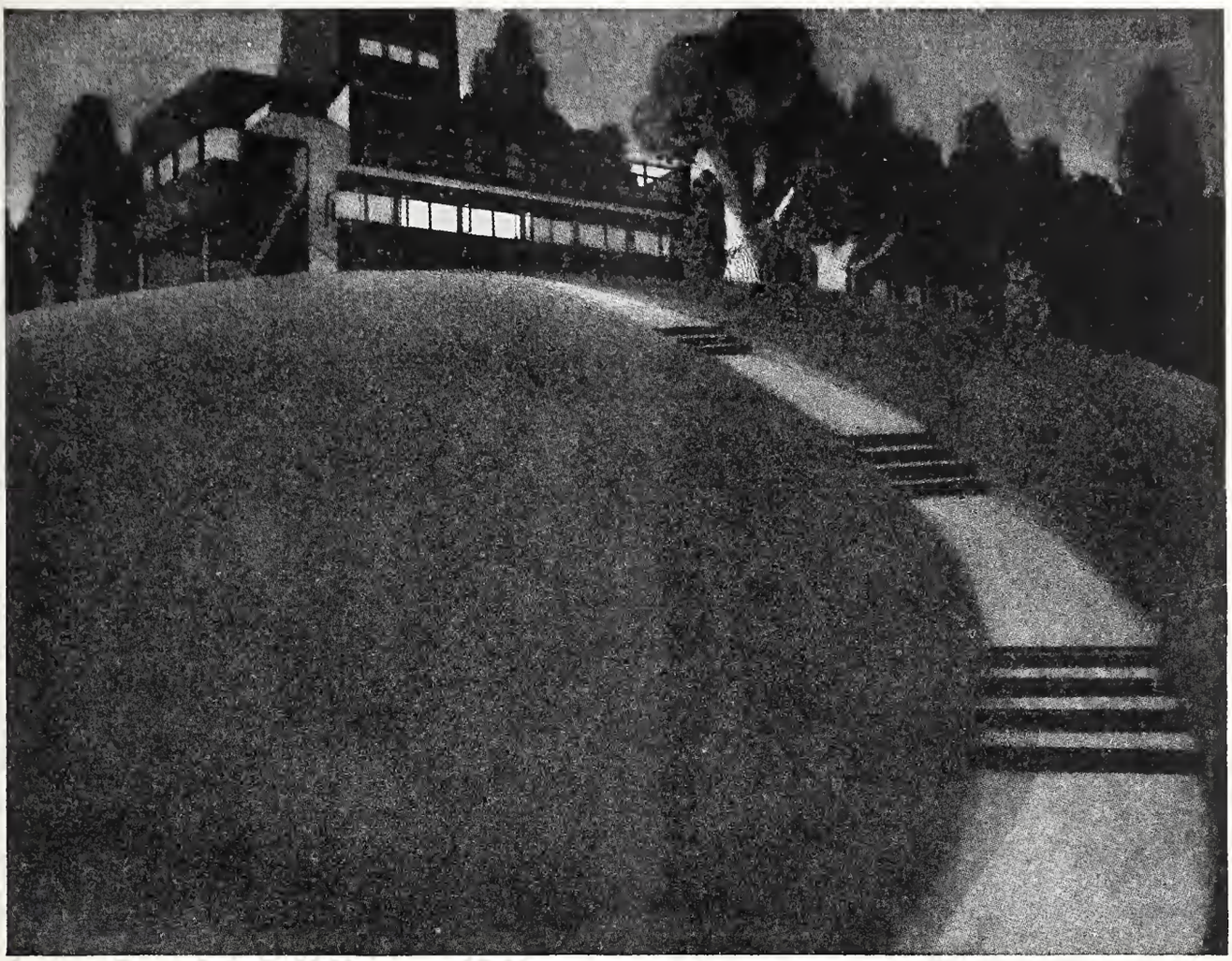

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TWENTY-FIVE YEARS AGO

(Continued from Page 12)

and nearly successful attack in the legislature, and lastly the general tone and purpose of the report of the Committee on Education at the State Society, are all evidence that we are dealing with a vital and still unsettled question. . . .

From an article on "Pulmonary Tuberculosis as Affected by Certain Other Diseases" by John C. King, M.D., Banning.

While observing some thousands of cases of consumption, I have become interested in noting the apparent effect of other diseases on the pulmonary condition. . . .

BOARD OF MEDICAL EXAMINERS

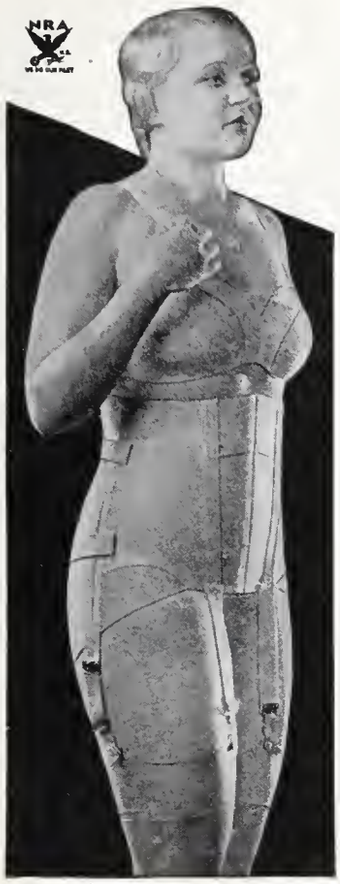
(Continued from Text Page 72)

merce, notices will be sent both to the advertiser and the radio station, with a view of effecting a stipulation under which the advertiser and the broadcaster agree to cease from the practice complained of.' Failing in this, the Commission said, the offender will be cited to appear at a public hearing." (Universal Service dispatch, dated Washington, May 16, 1934, printed in the San Francisco *Examiner,* May 17, 1934.)

"Acting upon advices from the State Attorney-General and the State Board of Medical Examiners, District Attorney Thomas Whelan today opened a drive against 'hospital association' salesmen, assertedly fleecing members in San Diego County. At the same time a warning was issued against pseudo-associations that offer sickness insurance to their members. Harry Baugh, chief investigator for the District Attorney, who has been secretly investigating fraudulent associations, said he had secured a list of many in San Diego County who had been 'stung.' Promising early arrests, Baugh said memberships were sold for from $1 to $5. He cited one case where a member of a 'hospital association,' living in Fall Brook, had been stricken with appendicitis. 'When he applied to the association for aid, they laughed at him,' Baugh said." (San Diego *Sun,* May 19, 1934.)

"The Western Medicine Service Company, Dr. Wilbur W. Willis and Leslie O. Myers, dentists, today were sued for $10,118 by Lorraine Anderson. The plaintiff charges she joined the medical service association and paid $2 a month, with a guarantee of medical and dental services when needed. She charges improper precautions against infection. The complaint asserts infection set in and the plaintiff is suffering permanent injuries." (San Francisco *Call-Bulletin,* June 14, 1934.)

"A jury yesterday, in the court of Superior Judge Ogden, Oakland, brought in a verdict of murder in the second degree against Dr. Oscar W. DeVaughn, negro physician of Oakland. He was charged with having performed a fatal illegal operation upon Mrs. Manuel Schwartz, 826 Lisbon Street, Oakland" (San Francisco *Chronicle,* May 10, 1934). Convicted in Superior Court last February on a charge of second degree murder, as the result of an illegal operation, Dr. Oscar W. DeVaughn, Oakland negro, last night was found guilty of subornation of perjury and faces an additional one to fourteen years' sentence. The state charges that he influenced the testimony of a woman in the previous trial by the use of opiates, but after conviction he was unable to supply her with drugs and she confessed to charges of perjured testimony." (San Francisco *Examiner,* June 14, 1934.) (Previous entry, April, September, December, 1930; November, 1933; April, May, June, advertising pages 18-19.)



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"Pleading guilty to a violation of the State Medical Practice Act, Charles Leach, barber, was fined $400 and given a 180 days' suspended sentence today by Police Judge E. E. Breitenbucher. Leach, who admitted treating persons for cancer with a 'cure' that had been in his family's possession three generations, was arrested several weeks ago. J. Blackstone, a patient, was taken to the San Joaquin General Hospital in a critical condition. . . ." (Oakland *Tribune,* May 31, 1934.) (Previous entry, June, 1934.)

"Good news to enemies of quack cancer 'cures' were two court actions last week. In St. Louis, three years ago, Mrs. G. W. Haggard discovered a pea-sized lump in her right breast. A surgeon advised an immediate operation. More attractive was the prospect held out by Doctors John E. and Edward C. Westaver, father and son, who promised a cure with their salves at $2 a treatment. After nine months under their care, Mrs. Haggard died. In St. Louis medical experts testified that dallying with the worthless Westaver nostrum had cost her a chance of recovery through proper treatment. The jury last week awarded her husband $6,500 damages against the Doctors Westaver. Last winter Mrs. Cora Britten of Elliott, Maryland, became convinced that she had a cancer of the breast. A friend told her about Dr. Harlow R. Street, who conducts a 'cancer sanitarium' at his Washington home, and had a 'secret salve' to devour the cancer. Against her physician-husband's advice, Mrs. Britten went to the Chevy Chase, Maryland, home of Doctor Street's partner, Dr. Nathan Sherwood Ferris, for treatment. She spent nine weeks there and two days in a Baltimore hospital before she died. Hospital examiners found no trace of cancer, but it was conceded that Doctor Street's salve had eaten through her breast, charred her ribs and penetrated her lung, and might well have destroyed the cancer too. The Coroner's

(Continued on Next Page)

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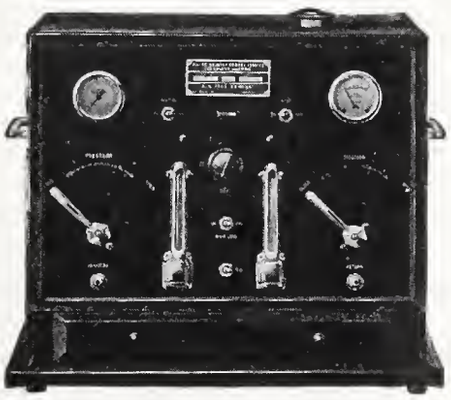

See These Articles on Elliott Technic in Pelvic Inflammatory Diseases

Holden and Gurnee, Am. Jour. Obs. & Gyn., July, 1931.
Holden and Sovak, Am. Jour. Obs. & Gyn., Nov., 1932.
Counseller, Jour. A. M. A., Sept. 16, 1933.
Graham, Am. Jour. Surg., June, 1933.
Stone, Am. Jour. Physical Therapy, April, 1932.
Jacobs, St. Louis Med. Soc. Bulletin; discussion by Vaughan and Gellhorn, June 5, 1931.
Holliday, Jour. of Dental Research, Dec., 1932.
Shullman, Jour. of Med. Soc. of New Jersey, 1933.

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BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

jury returned a verdict of 'criminal conduct, gross malpractice, and brutal treatment.' Last week, in Rockville, Maryland, Doctors Street and Ferris were indicted for manslaughter." (*Time,* December 4, 1933.)

"Considerable increase in the number of patent medicine concerns beginning operations in California is noted by Dr. J. D. Dunshee, head of the State Department of Public Health. 'Most of the concerns are without capital and appear to be uninformed as to the limitations of claims that can be made of their products,' the official stated. 'Most of the products are in violation of the Pure Drugs Act. Every effort has been made to prevent these violations as soon as such products appear on the market. . . .'" (Los Angeles *Times,* April 30, 1934.)

In a recent trial of Edward Shook, licensed chiropractor, held in Montebello Township, county of Los Angeles, the prosecution is said to have put on two witnesses, who testified that Doctor Shook delivered a child to each, performed an episiotomy on each, and circumcised one male child. A nurse is said to have testified she had seen Shook do twelve circumcisions; that each of the women was given a barbituric acid compound, known as "Painless" before childbirth, and that on some occasions, at his direction, she had administered ether to a patient, and that every patient was given pituitrin routinely. Chiropractor Shook is said to have taken the witness-stand and testified he did all of these things. The vice-president of the Los Angeles College of Chiropractic is said to have taken the stand in defense and testified to the course of study taught in the college; stated he himself had delivered 1,001 babies, to be exact; that he had never

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done an episiotomy; that he did not practice minor surgery, and students were instructed it was not legal for them to practice minor surgery. After the testimony was in, following a two-day trial, the jury brought in a verdict of not guilty. Our investigator commented, "As far as a chiropractor exceeding the bounds of his license, this is one of the best cases we have ever been on. There was very little controversy over the point, the defendant admitting that he did the surgery."

"Accused of persuading elderly women to contribute $100 each to the World Universal Brotherhood, of which he declared himself 'international impresario,' Aryan Kelton, thirty years of age, was charged with two counts of petty theft in a complaint issued by Deputy City Attorney McDonald yesterday. Kelton, according to McDonald, was arrested with 'Dr.' Aris Amaral, self-styled divine healer, in the latter's 'Temple of Isis' at 3215 Barham Boulevard, last week. Amaral is facing trial on a charge of practicing medicine without a license. . . ." (Los Angeles *Times,* May 15, 1934.)

"Ending a six years' chase, which covered three continents, 'Dr.' Orlando E. Miller, ex-convict, self-styled psychologist and stock saleman par excellence, of San Francisco and way points, yesterday was arrested in New York as he stepped from an incoming liner, according to word received here by United States Attorney H. H. McPike. The elusive fugitive waived extradition and immediately was started on the trip to San Francisco to face an indictment charging use of the mails to defraud. He conducted the defunct Rellimeo Film Company. Officials assert this company cost Pacific Coast investors $1,000,000. At the climax of his checkered career, begun in 1893 when he was sent to Leavenworth Prison for wrecking five Denver banks with a total loss of $20,000,000, Miller was indicted here in 1928, and immediately fled the country. Federal agents traced him into Canada, England, and France, where he has since remained near Paris, until he embarked five days ago on the Red Star Liner *Westernland.* His arrest resulted from a tip received by Assistant Attorney-General Joseph B. Keenan. From the time he was freed from Leavenworth, 'Dr.' Miller left a nation-wide trail of arrests, indictments and law suits in his wake. He has been a Sunday School teacher, editor, patent medicine man, head of a large combination of medicine-selling firms, and president of a sanitarium." (San Francisco *Examiner,* May 29, 1934.) (Previous entries, June, October, November, 1926; March, 1927; March, 1928; December, 1929.)

"With the affirmation of the jury's verdict and the sentence of Judge Oliver Youngs, Dr. Harvey P. Charles, Berkeley physician, with offices in the Acheson Building, Shattuck and University avenues, today was committed to the county jail by Judge Youngs. Doctor Charles will serve sixty days on two counts of battery. Following his conviction by the jury several months ago, Judge Youngs sentenced him to serve thirty days on each count—sentences to run consecutively. An appeal to the Superior Court recently resulted in the affirmation of the verdict and sentence." (Berkeley *Gazette,* May 15, 1934.) (Previous entry, April, 1934.)

"Freedom for Dr. Leman D. Cruice from Federal Prison at McNeil Island can come only through a pardon from President Roosevelt. This was established by Dr. Wegeforth, a friend of Dr. Cruice, in correspondence with officers active in Dr. Cruice's conviction, he said yesterday. Dr. Cruice, retired Major from the Army Medical Corps, was convicted

(Continued on Next Page)

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BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

here before Federal Judge Jeremiah Netter for irregularities in writing narcotic prescriptions, and sentenced to fifteen months in prison. . . ." (San Diego *Union,* May 13, 1934.)

"Declared to be the czar of a far-flung 'medical empire' covering the entire state, E. Townsend Webb was arrested here yesterday on a charge of violating the State Medical Practice Act. The arrest was made by Special Agent J. W. Davidson of the State Medical Board and Detectives E. W. Thorpe and J. H. Harbert. A large supply of medicinal preparations were seized as evidence. Davidson stated last night that Webb has a record of similar arrests going back to 1913. He is said to have a regular route covering the entire state, visiting each city every four weeks. . . ." (Stockton *Independent,* May 30, 1934.) (Previous entries, April and May, 1929.)

"Charged with having practiced medicine without a license, L. R. Mogle of 356 South Broadway, described as a chiropodist, was convicted yesterday before Municipal Court Judge McKay. Testimony was given by women patients that Mogle treated them for other than foot ailments and that in some cases the patients were asked to disrobe. . . . " (Los Angeles *Times,* May 22, 1934.)

"Gypsy Dan Chandler, medicine man, was given the maximum sentence of 180 days in jail and $400 fine yesterday on his peace - disturbance conviction, by Municipal Judge A. A. Scott. The medicine man, who is said to have a record of scores of arrests, was accused of using obscene language in hawking his wares on Main Street. His motion for new trial denied, Chandler gave notice of appeal, but went to jail when appeal bail was set at $10,000." (Los Angeles *Illustrated Daily News,* June 3, 1934.) (Previous entry, February, 1931.)

"'Rock water' that she assertedly had Mrs. Eugenie A. Metzner, age seventy, drink, today had resulted in a 180-day jail sentence for Mrs. Mattie Crawford, health lecturer and 'back to nature' cultist. Mrs. Crawford was sentenced by Municipal Judge Arthur Crum, after a jury had convicted her on charges of practicing medicine without a license. State Medical Board inspectors said that Mrs. Crawford had 'prescribed' water in which certain rocks had been soaked for Mrs. Metzner as a part of a 'treatment.'" (Los Angeles *Herald-Express,* June 12, 1934.)

"Dr. George Anthony Zorb, prominent physician, must pay his former friend and 'pal' of twenty years' standing, Dr. Claire Wilson, $20,500 damages, as the result of an accidental shooting last year, according to a jury verdict on record today in Judge Frank M. Smith's court. The jurors stood nine to three for the damage award. Judge Smith, however, granted a ten-day stay of execution, during which it was expected

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that Doctor Zorb's attorney would seek a new trial or file notice of appeal. . . ." (Los Angeles *Herald-Express,* June 8, 1934.)

"Charged with violation of the Medical Practice Act, Philip Amistad was arraigned in Judge I. Mayfield's Justice Court and pleaded guilty yesterday afternoon. Amistad was fined $100 or given the alternative of fifty days in jail. He was committed to jail. . . ." (El Centro *Morning Valley Farmer,* May 30, 1934.)

The records show that Arthur Matthew Benson, alias A. M. Romous, Edward M. Dodge, Lawrence Roy Benson, etc., was on June 6 arrested in San Francisco as an asserted narcotic addict. It is said that in 1930 he operated the Thayer Foundation in Los Angeles. He is also said to have been convicted in Washington, D. C., in 1930 on a charge of violation of the Harrison Narcotic Act. (Previous entries, June, 1930; July, 1931.)

K. Sadao Deguchi (S. K. Deguchi) is reported to have pleaded guilty in police court at Stockton, May 4, 1934, on a charge of violation of the Medical Practice Act and sentenced to pay a fine of $120.

Reports relate that on May 21 Norman Schmidt was sentenced in the Municipal Court of the city of Los Angeles to pay a fine of $100 or serve fifty days in the city jail, following his plea of guilty to violation of the Medical Practice Act. He is said to have been examining feet, making diagnoses, treating, etc., while located in a Los Angele shoe shop.

L. W. H. Gablere, assertedly calling himself a doctor, and specializing in foot correction, was reported to have pleaded guilty in the Pasadena Justice Court, May 17, 1934, and sentenced to thirty days in the county jail, suspended for one year on condition that he no longer violate the provisions of the Medical Practice Act.

Maurice LeBelle, Los Angeles chirothesian, was reported on April 15 to have been sentenced to pay a fine of $100 on a charge of violation of the Medical Practice Act, $50 of which fine was suspended and $50 paid. He later is reported to have obtained a chiropractic license and is said to have been using the radio for advertising purposes.

Frank Schaffel, listed in the Los Angeles telephone directory as "Dr.," was reported on May 19 to have pleaded guilty in the Municipal Court of Los Angeles to a charge of violation of the Medical Practice Act and was sentenced to serve thirty days in the city jail, sentence being suspended. Investigation reports relate that he had been treating patients for arthritis, rheumatism, tuberculosis, etc.

On May 10, in the Justice Court of Lancaster, Maynard A. Hamilton and Sarah Ann Hamilton were said

(Continued on Page 21)

DIARRHEA

"the commonest ailment of infants in the summer months"

(HOLT AND McINTOSH: HOLT'S DISEASES OF INFANCY AND CHILDHOOD, 1933)

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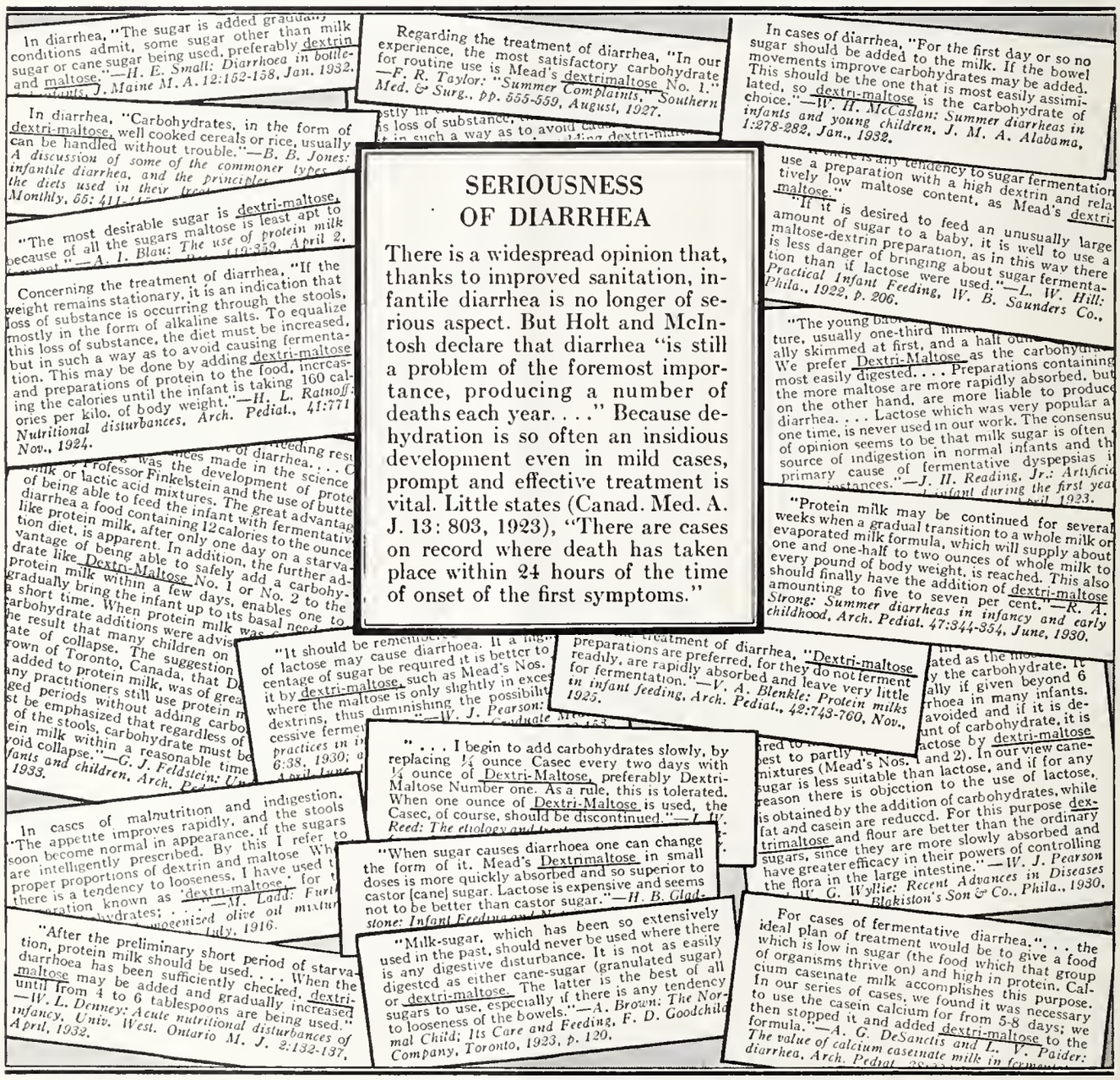

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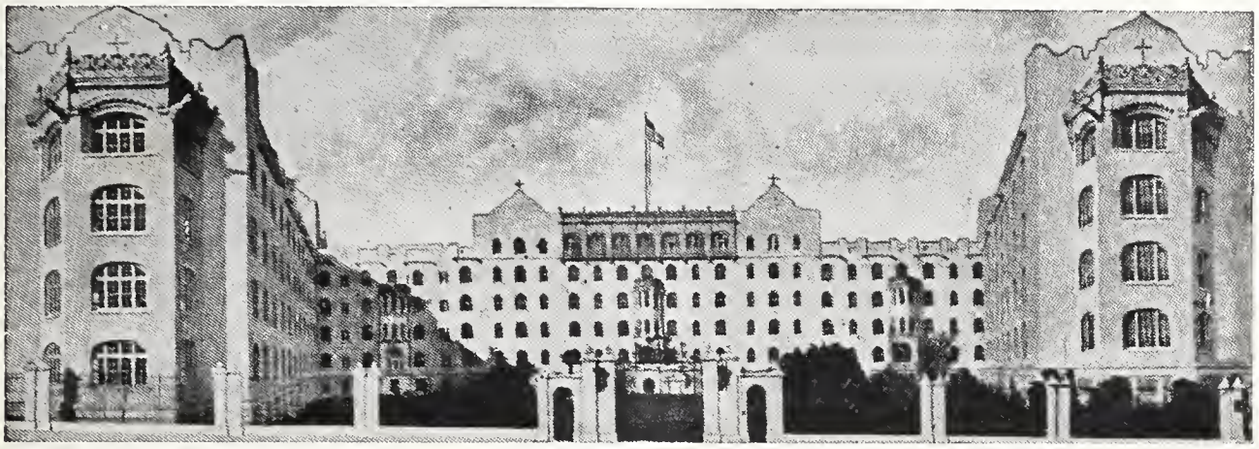

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to have pleaded guilty to a charge of violation of the Medical Practice Act and sentenced to serve thirty days in the county jail, sentence being suspended on condition they immediately cease from treating the sick and afflicted in violation of the Medical Practice Act.

Clyde F. McNeil, reported in June "News Items" as the holder of an "Aquarian-Age Healing" diploma, on May 11, in the Municipal Court of Los Angeles, pleaded guilty to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of $100 or serve thirty days in the city jail, suspended on condition that he no longer violate the Medical Practice Act.

Reports relate that Jean Fernand on May 14 pleaded guilty in the Municipal Court, Los Angeles, to a charge of violation of the Medical Practice Act and on May 22 was sentenced to serve 180 days in the city jail, the sentence suspended, and he was placed on probation for a period of two years on condition that he does not further violate the provisions of the Medical Practice Act.

Bubonic Plague.—The continued presence of plague among the ground squirrels of California, with only occasionally the occurrence of a sporadic human case, is likely to result in an attitude of indifference on the part of the people generally, which makes difficult the efforts of health authorities to eradicate this potentially dangerous disease from our midst.

There are certain facts concerning the epidemiology of plague that should be generally known else people will, through a mistaken sense of security, neglect ordinary precautions and fail to back up their officials in a campaign which requires the intelligent expenditure of funds for this specific purpose.

This disease, now known to be primarily one of rats and squirrels, and only secondarily one of man, is the same as the dreaded black death of former times: the plague of Justinian, the plague of Florence, and the great plague of London. We do not, however, expect any such calamitous outbreaks now, for, with our knowledge of its cause and mode of spread, it could be checked with no great loss of life, but only with the expenditure of tremendous sums in the eradication of rodents, in the destruction of insanitary buildings and rat harbors, and the loss of further sums in the interference with business and commerce by quarantine and by the alarm of the people.

It is characteristic of plague to lie dormant and smolder along for many years, affecting only some wild rodent, such as the California ground squirrel and the tarbagan in Manchuria. Occasionally it takes on renewed activity and spreads to the rat population of cities, and then, through the traveling propensities of the rat, finds its way to other communities, particularly seaports (for the rat travels in ships), and ultimately to other countries. From the rat, and also from the squirrel, plague is carried to man through the medium of the flea. The prevention of plague, therefore, involves not only a war against rats and squirrels, but people must avoid contact with these animals as much as possible on account of fleas. This means one must keep away from squirrel burrows, as fleas may be on the ground in their vicinity; it means destroying these animals on one's own property, and the destruction of rat harbors that may exist in the form of rubbish, wooden walks, piles of lumber, etc. It means also keeping one's house free from fleas.

Plague is of especial concern to California, because here a new world focus has been established among

(Continued on Next Page)

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(Continued from Preceding Page)

the ground squirrels, which greatly resemble the wild rodents of the older foci in Asia. It was in Asia that the disease originated in the middle ages and spread over Europe, but it never appeared in America until the year 1900, when infected rats from China reached our shores. This extension of plague is part of a world-wide pandemic which is still in progress, and human deaths from plague in India are now occurring at the rate of 3,000 or 4,000 per month.

We should not be needlessly alarmed, but, on the other hand, we should not take too lightly the fact that squirrel plague has recently appeared with augmented virulence in a portion of the State not hitherto attacked. In certain districts of the lower San Joaquin Valley there is in progress an active epidemic among the squirrels and the State Board of Health is maintaining there a crew of men expert in recognizing plague and in exterminating squirrels. The State laboratory has defintely proved plague in approximately 200 animals that have been sent in by this crew in the course of their survey during the past few months. Fortunately for us the district involved is very sparsely settled and no human epidemic in that locality is looked for. The danger of the situation, however, is that the disease may extend to the rat population of nearby cities, further spreading the disease and possibly causing some human bubonic cases, or, more serious still, human cases of the pneumonic type, from direct contact with squirrels. The pneumonic form is especially dreaded because once started it can spread directly from one person to another without the mediation of rat or flea.

Since the first appearance of plague in San Francisco in 1900, we have had two bubonic epidemics, the first in San Francisco, resulting in 113 deaths, and the second in San Francisco and Oakland, with seventy-eight deaths. We have had two pneumonic epidemics, the first in Oakland, with thirteen deaths, and the second in Los Angeles, with thirty deaths. No epidemic has occurred since 1924. We have had in all thirty-five sporadic cases of plague, with nineteen deaths, in rural districts, the following counties being represented: Alameda, Contra Costa, Monterey, San Benito, Santa Clara, Santa Cruz, Santa Barbara, San Joaquin and Los Angeles. Squirrel plague has been proven in Alameda, Contra Costa, Fresno, Merced, Monterey, San Benito, San Joaquin, Santa Clara, San Luis Obispo, Santa Cruz, Stanislaus, San Mateo, Santa Barbara, Ventura, Kern and Tulare.

These facts regarding plague are not cause for immediate alarm, but they call for a concerted, persistent and adequately financed war on rodents in this State. Cities should enforce rat proofing building ordinances patterned after the requirements of the State Board of Health. County authorities should furnish funds for squirrel extermination and should work in close coöperation with the State Board of Health. Citizens, both of cities and of rural territory, should do their part by approving of the expenditure of funds by their officials in carrying on this work, and by exterminating rodents and their habitations on their own property.—*Weekly Bulletin, California Department of Public Health,* June 2, 1934.

Some Nostrums in Retrospect.*—The Bureau of Investigation of the American Medical Association receives thousands of inquiries every year from physicians and laymen asking for information on "patent medicines" and quacks. The chief work of the Bureau of Investigation consists in answering these inquiries. Naturally the bulk of the questions that come in deal with nostrums that loom large in the public eye at the time of the inquiry. The material that follows represents condensed restatements of more extensive articles that have been published in the past in this department of *The Journal* dealing with preparations about which the Bureau still receives many inquiries. It is reasonable to believe that for every letter that the

* Excerpt from an article in *The Journal of the American Medical Association,* June 2, 1934, page 1867.

APPROVED CLINICAL PATHOLOGISTS

American Medical Association Essentials for An Approved Clinical Pathologist

An approved clinical pathologist should be a licensed graduate of medicine. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry, and other allied subjects for at least three years, and he should be reasonably familiar with the manifestations of disease in the body. The director of a clinical laboratory shall be on full time or have definite hours of attendance, devoting the major part of his time to this specialty. A clinical laboratory is an institution organized for the practical application of the fundamental sciences by the use of specialized apparatus, equipment and methods, for the purpose of ascertaining the presence, nature, source, and progress of disease in the human body.

The following Clinical Pathologists directing private laboratories in California are approved by the Council on Medical Education and Hospitals of the American Medical Association:

Clinical Laboratory of Drs. W. V. Brem, A. H. Zeiler, Roy W. Hammack and G. D. Maner, 657 So. Westlake Avenue, Los Angeles, California.

Zera E. Bolin, M.D., 490 Post Street, San Francisco, California.

These laboratories use standard methods and are fully equipped to make all clinical examinations of recognized value in: Tissue Pathology, Bacteriology, Hematology, Serology, Bio-Chemistry, Kolmer Wassermanns, Kahn test, Medico-legal, Basal metabolism, Blood chemistry, Hormone Test for Pregnancy, Parasitology, Cardiology, Autogenous vaccines, etc.

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Bureau gets from a physician or layman about an advertised "patent medicine," there are probably a dozen laymen and an equal number of physicians who are interested in getting such information but do not take either the time or the trouble to write. It is for this reason that the following material in a greatly abbreviated form re-states facts previously presented on the products named:

Uvursin.—Uvursin is put out by the John J. Fulton Company of San Francisco and is sold as a remedy for diabetes. According to some of the advertising, Uvursin is said to "combine the desirable principles" of chimaphila (pipsissewa), eupatorium (boneset), pareira, taraxacum (dandelion), uva ursi (bearberry), jublans (butternut bark), lappa (burdock root), imula (elecampane), eriodictyon (yerba santa), zea mays (corn silk), with some senna, potassium nitrate and sodium borate. In other words, the product is essentially a mixture of herbs, most of which have long been discarded by scientific medicine and nearly all of which have mild diuretic action. In this respect Uvursin runs true to the orthodox diabetes-cure quackery. Give the diabetic a kidney stimulant so that more urine will be passed, and the patient will be gratified to find that he apparently has a lessened amount of sugar in the urine. The facts are, of course, that there is no real diminution in sugar, but because of the increase in fluid output, any individual specimen of urine will naturally have a smaller proportion of sugar in it. Uvursin is apparently the same product that the John J. Fulton Company used to put out under the name of "Fulton's Compound ℞ 2." This preparation was declared by the Federal authorities to be worthless as a cure for diabetes, and the courts held that the implied claim that it would cure diabetes was false and fraudulent. The Fulton concern attempted to evade the Federal law by declaring that they themselves did not make the claims for curative effect, but that they merely quoted testimonials stating, in effect, that it

(Continued on Next Page)

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(Continued from Preceding Page)

was a cure for diabetes. One Federal judge on the Pacific Coast upheld this preposterous thesis, but the Circuit Court of Appeals reversed that judge's decision. The case was then remanded to another United States District Court and judgment was obtained against the Fulton concern. A somewhat lengthy and detailed article on the Fulton Compound was published by the Bureau of Investigation in *The Journal,* January 29, 1916. In this article case after case was cited of individuals who had given testimonials to the Fulton Company and which that company printed, indicating that the stuff had cured diabetes. It was shown that the patients were dead, having died of the very disease of which they had claimed to be cured. The article has been reprinted in the pamphlet "Nostrums for Kidney Disease and Diabetes" (15c). Since the change of name has been made, the Fulton concern has widely circularized the medical profession.

Renton's Hydrocin Tablets.—The Renton Company of Pasadena, Calif., has for some time put out an alleged rheumatism cure for which it used to make the claim: "What insulin is doing for diabetes, Renton's Rheumatic Tablets are doing for arthritis, neuritis and rheumatism." At that time the "patent medicine" was known as Renton's Rheumatic Tablets. Apparently pressure brought to bear by the National Food and Drug officials caused them to change the title to Renton's Hydrocin Tablets. Extensive analytical work done by the American Medical Association Chemical Laboratory brought out that the tablets were essentially five-grain cinchophen tablets, with a small amount of what appeared to be tetra-ethyl-ammonium hydroxid. In the Bureau of Investigation's original article on this product, published January 17, 1931, attention was called to the fact that the public, in purchasing Renton's Hydrocin Tablets, was paying an exorbitant price for cinchophen and in ignorance of the fact that it was getting cinchophen. Further, it expressed the opinion that it was little less than criminal that irresponsible "patent medicine" exploiters should be permitted to put so potent a drug in secret mixtures with no warning, especially as the number of cases of acute yellow atrophy of the liver following the continued use of cinchophen was increasing. Since the article was published, there have been a number of cases of poisoning reported following the use of the Renton nostrum, including the deaths of six people who had taken the hydrocin tablets, and in all of them autopsy disclosed symptoms of cinchophen poisoning.

Viavi.—A piece of quackery that has been exploited throughout the United States for many years, known as "Viavi," was the subject of an extended article that appeared many years ago (April, 1907) in the *California State Journal of Medicine.* The Viavi Company is said to have been founded by two brothers, H. and H. E. Law of San Francisco. Viavi is not the name of a single preparation, but a generic name given to a long list of nostrums put out by the Viavi Company. Practically all of the preparations are for the alleged treatment of diseases peculiar to women. There are "Viavi Capsules," "Viavi Cerate," "Viavi Liquid," etc. So far as analyses have been made of them, the basis of most of the Viavi preparations seems to be extract of hydrastis (golden seal). The method of sale of the Viavi preparations is not that of the usual "patent medicine." They are not handled by druggists and

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they are apparently not sold on the mail-order plan. The business seems to be carried on by means of agents. However, there has been one reported case of misbranding under the National Food and Drugs Act, that described in Notice of Judgment No. 19466, issued December, 1932. Viavi Liquid and Viavi Cerate were both included in this prosecution, which was based on the fact that the therapeutic claims were false and fraudulent. One of the methods that have been reported as used by Viavi representatives in order to make "contacts" was that of getting well-meaning church women and unsophisticated parsons to act as pawns in the game of quackery. Cards would be sent out by the Ladies' Aid Society of a given church, inviting women to attend an illustrated talk on "The Science of True Living," to be given "under the auspices of the Educational Department" of some branch of the Viavi concern. The bait was the promise that the Viavi agent would pay the Ladies' Aid Society 10 cents for every woman who attended the "lecture." What the Viavi business sometimes does was well described in a brief article that was published in *The Journal* December 3, 1927. A well known physician in the Middle West reported at that time that he had been called to see a twenty-seven-year-old woman whom he had known for many years, as he had been the attending physician of the family. He was called suddenly because the woman had a severe uterine hemorrhage. On examination he found unmistakable evidence of cervical carcinoma of several months' standing. He was told that the young woman some four months previously had begun to lose weight, had severe pelvic pains, discharge, etc., and her husband had told her to go to the family physician. A neighbor, however, advised her to see the local Viavi agent first, which she did. From the agent she got two bottles of Viavi, one costing $9.50 and the other $3.50. The Viavi agent sent the woman's "symptom blank" to the Viavi branch headquarters, and the mail-order diagnosis was made that the condition was probably a "cyst" which would require several months' Viavi treatment to absorb! As the family physician wrote: "Four months ago there might have been a chance to save the life of this young mother; today the case is practically hopeless."

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Crazy Crystals.—This product has been claimed to be the mineral constituents that are obtained by evaporating a water known as "Crazy Mineral Water." The product Crazy Mineral Water has been on the market for many years and has been declared misbranded (because of fraudulent curative claims) or adulterated (because it contained filth) at different times in the past. The exploiters of Crazy Mineral Water have published what purported to be the ingredients of the water, and while they have varied, they all agree in showing that the chief mineral ingredient is sodium sulphate (Glauber's salt). Crazy Crystals was the subject of an article by the Bureau

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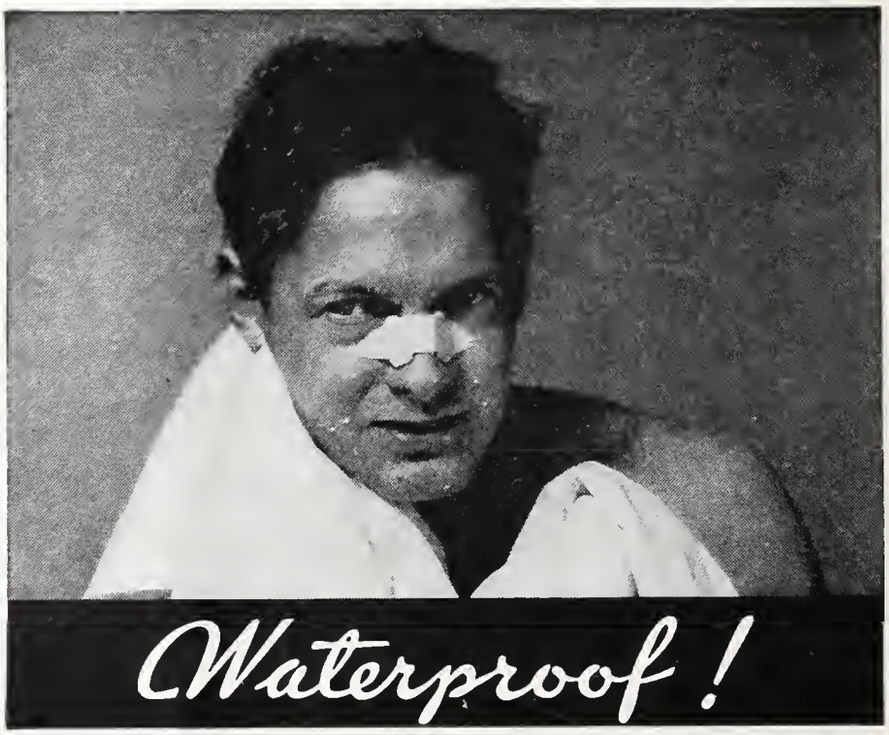

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(Continued from Preceding Page)

of Investigation published in *The Journal* of March 11, 1933. It was there declared, in summing up the matter, that a $1.50 package of Crazy Crystals could accomplish nothing that could not be accomplished equally well with a few cents' worth of Glauber's salt. It was further stated that the attempt in the radio advertising of Crazy Crystals to lead the public to believe that the preparation was not a drug was but playing tricks with the English language, for Crazy Crystals is just as much a drug as Glauber's salt or any other saline laxative sold for the treatment of human ailments.—*The Journal of the American Medical Association,* June 2, 1934.

Malignant Neoplasms of the Thyroid Gland.*—Malignant disease of the thyroid gland is, relatively speaking, an uncommon disease. During a period of twenty years there were recorded at the State Institute for the Study of Malignant Diseases 11,212 malignancies of which forty-two were neoplasms of the thyroid gland—an incidence of 0.37 per cent.

According to the majority of observers, the actual frequency of this type of neoplasm is unknown; in goitrous regions it is estimated to be from 2 to 4 per cent of all malignant growths and in nongoitrous regions from 0.4 to 0.5 per cent.

Most cases of thyroid malignancy occur between the ages of forty to sixty years, although occasionally it has been reported in young adult life. The average age of the Institute patients was 52.6 years.

Recent figures show that malignant neoplasms of the thyroid occur more frequently in females than in males. However, considering the relatively low incidence of goiter among males—six or eight females to one male having goiter—it is apparent that malignancies of the thyroid are more likely to develop in the male with goiter than in the female with goiter, as the ratio of females to males is not maintained but is nearer 2.2 females to 1 male having malignancy of the thyroid.

There are two types of malignant disease which occur in the thyroid gland—those of epithelial origin called carcinoma or adenocarcinoma, and those of connective tissue origin or sarcoma. The sarcomas are of two varieties—spindle cell and lympho. They occur usually between the ages of fifty and sixty, and grow with extreme rapidity.

A history of preëxisting goiter is present in the majority of cases. Fetal adenomas are looked upon as being precursors of many of the malignancies found. In the Institute series the shortest history was one month and the longest, forty years.

The treatment given was a combination of surgery followed by irradiation by means of radium packs and high voltage x-ray in the operable cases; in the inoperable cases, radiation only. One case of lymphosarcoma of the thyroid has remained alive and well for fifteen years after treatment.

From the study of the forty-two cases treated at the Institute it was concluded that malignant disease of the thyroid gland is relatively uncommon; it is fatal with few exceptions; the only curative procedure, apparently, is early operation followed by irradiation; when clinical diagnosis of malignant disease of the thyroid is possible the case is usually hopeless and irradiation is only palliative, palliations lasting up to eight and nine years.—*Health News* (New York State Department of Health).

* Abstract of paper by B. F. Schreiner, M.D., and Walter T. Murphy, M.D., State Institute for the Study of Malignant Diseases, 113 High Street, Buffalo, New York.

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University of California Enrollment.—An Associated Press item gives the following information:

"The University of California, from the standpoint of full-time students, is the largest in the United States.

"This was shown recently in a survey on registration in American universities and colleges made by Dr. Raymond Walters, president of the University of Cincinnati, published in the current issue of *School and Society.*

"Enrollment in some of the larger schools follows:

University	Full-Time Students	All-Resident Students
California	18,337	21,019
Columbia	13,322	24,357
New York University	12,982	25,113
Minnesota	11,292	14,970
Illinois	9,996	11,523
Ohio State	9,335	11,564
Michigan	8,261	10,113
Harvard	7,911	9,444
College of the City of New York	7,772	22,986
Wisconsin	7,375	9,608
Pennsylvania	6,402	11,170
University of Washington	6,398	8,782
Pittsburgh	5,792	9,653
Cornell	5,671	7,136
Northwestern	5,548	11,517
Chicago	5,414	11,387
Yale	4,881	5,183
Pennsylvania State	4,609	6,900
Southern California	3,794	10,639

Secret of Life Linked to Gene.—The elusive secret of what life is was traced recently to the heart of the tiny gene, the unit of heredity less than eight-millionths of an inch in diameter, by Dr. C. B. Davenport of the Carnegie Institution of Washington, according to an Associated Press dispatch.

Latest scientific discoveries show, Doctor Davenport said in his annual report as head of the institution's department of genetics, that the gene is the

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actual creator of life, in addition to its better known task of carrying inherited characteristics, like color of eyes, from one generation to another.

The scientist explained that this life creator probably consists of a compound molecule, a bundle of several smaller molecules which in turn consist of clusters of atoms. They create life by their ability to divide into other groups of molecules, all of which retain the qualities of the parent molecule.

The secret of what life is, the difference between living and dead matter, lies in this ability of the gene molecules to divide spontaneously, Doctor Davenport said, picturing it as the force that keeps life going in the universe in opposition to other forces pushing it toward stagnation and death.

A new discovery about the night air that grandmother used to think so unhealthful, showing that people who breathe it take into their systems one-third more radio-active matter than in the daytime, was also explained recently by Carnegie Institution scientists.

In large enough amounts, radio-active material in the body can be very harmful, as illustrated by people who drank "radium water" and wetted brushes full of radium paint with their lips to paint watch dials.

The discovery that we breathe more radio-active matter at night raises some interesting questions as to whether this affects the body, said the scientists. They demonstrated it at the annual exhibition of the institution's scientific work that opened in Washington on December 16, 1933. So far, of course, there is no evidence that it is harmful.

Both day and night the human system takes in small amounts of radio-active material in the form of radon and thoron, which float as gases in the air, but the night air contains about 30 per cent more.

The discovery was made with a new device known as an "ion counter" that also can be used to measure the purity of air, both outdoors and in crowded halls and homes. The counter tabulates the relative amounts of two kinds of electrical particles in the air—large and small ions.

Nutritional and Technical Claims in Food Advertising.* — Food advertising claims may be divided roughly into two classes. The first class of claims includes statements without technical, scientific or exact meaning. These statements are essentially vague and are susceptible to many interpretations. For example, there are many "best" coffees, "best" flours, and "best" breads on grocery shelves. They are all "best" because no one knows what "best" means in this class of articles. These vague claims serve merely to attract attention to certain foods. They have as much meaning as a dog's bark; it lets folks know a dog is around.

* By Raymond Hertwig, secretary of the Committee on Foods of the American Medical Association.

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Although meaningless, these vague claims serve, however, to extend sales, as when people are in a buying mood they buy those articles uppermost in the mind. This is the advertiser's business; he attempts to induce buying moods and to keep particular products before the public eye. Vague advertising of this character is unobjectionable as long as the claims are not grossly exaggerated as to become ridiculous. Examples of ridiculous claims are the alleged discoveries of certain foods by unnamed world-renowned chemists usually abiding in Switzerland. These chemists make such astounding discoveries as the simple mixing of sugars, cocoa, eggs, and milk to produce the most wonderful foods of all time; foods which put one to sleep or send you on your way rejoicing (either or both), which supply an alphabet of vitamins, treasured min-

(Continued on Next Page)

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(Continued from Preceding Page)

erals, and above all that wonderful something, "lecithin" (nothing to most people), for the shell-shocked, and sufferers of jittered nerves or the depression. This wonderful something, "lecithin," is an innocent component of hen's eggs now selling at twenty cents a dozen.

The second class of claims includes statements with definite technical, scientific or exact meaning. These statements are intended to inform the public of facts about foods; of vitamin content, of special mineral content, of blood regenerating powers, etc. They are presented as facts and they should be facts. Incorrect claims describing nutritional values of foods misinform and mislead the public. Parents send children to school to be taught established knowledge. Teachers who teach falsehood are not tolerated. The public sets a high standard for its schools to teach the youth; but permits a low standard for food advertising to teach its citizens of more mature years.

Advertising proclaiming so-called scientific information on foods should instruct the public as correctly as schools instruct classes. It should express nutritional values in popular terms that are properly understandable but not in terms implying false meanings. A school teacher must know his subject; he must conscientiously teach that subject to the enlightenment of his pupils. Should an advertiser be entitled to operate on any other basis? It is paradoxical that schools should spend the public funds gained through taxes to educate the people in truth and knowledge; and that advertising agencies should spend public funds gained through selling profits (another form of taxes) to miseducate and misinstruct the people. The public pays all bills of the government and of the industry; it is entitled to a just and honest return for this support of advertising agencies, the food industry, and the government. An essential part of this just and honest return for funds expended is the correct and proper instruction of the public by food advertising.

The Committee on Foods of the American Medical Association has pronounced its decision on food advertising claims with scientific or technical significance:

"Statements or claims in food advertising with technical, scientific, nutritional, physiologic or 'health' significance shall be carefully phrased so as to be in complete accord with established knowledge and authoritative opinion, and shall be free from misleading or incorrect popular implications or interpretations."—*Food Facts.*

Water Supply Officials Should Know Sanitary Condition of Watersheds.—Officials in charge of public water supplies of municipalities and institutions should be thoroughly informed concerning the supplies under their supervision and make frequent inspections of the watersheds and sources in order to maintain proper sanitary conditions. That such intimate knowledge is necessary was forcefully illustrated recently by a situation which arose in connection with the water supply of an institution in this state.

The superintendent of the institution sent a sample of water to the department for analysis and described the supply as being pumped from a spring-fed brook subject to pollution from pasture lands only. It was stated that the water was filtered before being furnished to the consumers. Analysis of the water indicated the presence of pollution.

The institution authorities were concerned over the results of the examination, and the supply was investigated by an engineer of the Division of Sanitation. It was found that the water supply was taken from a stream which had a watershed of about three square miles. There were twelve occupied houses on the watershed and one very insanitary privy within three feet of an intermittent stream tributary to the supply. A representative of the institution stated at the time that no one knew such a condition existed.

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Investigation of the pressure mechanical sand filter indicated that it acted simply as a strainer and furnished no bacterial purification. In fact it was the practice when washing the filter to open a bypass whereby water coming directly from the creek was delivered to the institution.

When these dangerous conditions were pointed out to the officials in charge of the institution, an apparatus for the chlorination of the water supply was ordered and installed immediately. Subsequent reinspection indicated that the chlorinator was operating satisfactorily and analysis showed that the chlorinated water was free from pollution and of safe sanitary quality.—*Health News* (New York State Department of Health).

"Variation" Clause Interpreted.—The so-called "variation" clause in the provisions of the Federal Food and Drugs Act, which deals with United States Pharmacopeial and National Formulary drugs, applies only to differences in the strength, quality or purity of the products, according to W. G. Campbell, Chief, Federal Food and Drug Administration. The clause does not permit the use of ingredients differing from those prescribed by the definition or formula.

In a recent decision of the United States Circuit Court of Appeals for the Second Circuit in the case of the United States vs. Harry Lesser, et al., it was held that noncompliance with the United States Pharmacopeial standards could be established not only by the methods of analysis prescribed by the United States Pharmacopeia, but also by any other logical and convincing means.

"An example of what must be considered a violation of the food and drug law under this principle," said Mr. Campbell, "is a product labeled as milk of magnesia manufactured from ingredients other than those stated in the monograph for milk of magnesia in the United States Pharmacopeia."

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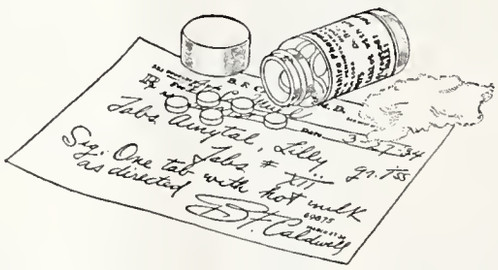

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Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOL. 41 JULY, 1934 No. 1

NON-ORGANIC CONVULSIVE DISORDERS OF CHILDHOOD—WITH SPECIAL REFERENCE TO IDIOPATHIC EPILEPSY*

By IRVINE MCQUARRIE, M. D.
Minneapolis, Minnesota

I

MEDICAL HISTORY affords no more interesting nor more tragic chapter than that concerning the convulsive disorders of children. This is particularly true of epilepsy, which, because of its chronicity and its intractability in the face of all efforts at treatment, has apparently puzzled and plagued mankind everywhere since the very dawn of the human race. Even in this enlightened day, most physicians, as well as laymen, rightly regard a severe generalized convulsion with alarm, and are filled with despair when the symptom recurs in chronic form. The basis for this attitude is to be found not only in the awareness that a convulsion may herald the onset of certain extremely serious diseases, but even more in the glaring deficiency of our knowledge regarding the causative mechanisms in those chronic convulsive states for which no structural pathology can be demonstrated.

A general survey of the convulsive disorders seen over a period of years in any large pediatric clinic of the temperate zone would probably show a distribution of cases on the basis of etiology and age not significantly different from that shown graphically in Figure 1. Here it may be observed that the relative frequency of certain etiologic factors varies greatly with age. Birth injuries and congenital defects of the brain account for a large majority of cases during the first month of life, acute infections playing a secondary rôle. During the next three months the order is reversed. Throughout the remainder of infancy, and in very early childhood, infantile or rachitic tetany assumes an important position. During the age period immediately above this, the acute infectious diseases again play the major rôle, with idiopathic epilepsy also accounting for a significant percentage of cases for the first time. Throughout the remainder of childhood—that is, beyond the sixth year—the latter disorder is by far the most frequent cause of convulsive seizures.

Granting that a small percentage of the patients here classified as idiopathic epileptics might be found by careful encephalographic or postmortem studies to have structural lesions in or about the brain, it is generally conceded that the great majority show no such changes. This, then, brings into numerical prominence the entire class of convulsive disorders for which no definite brain pathology has been demonstrated. The present paper deals primarily with this type of disorder. (See shaded portion of charts in Figure 1.) The chief representatives of the non-organic convulsive group are the following: infantile and other forms of tetany, hypoglycemic states, uremia, acute poisoning with certain convulsant drugs, acute infections not directly affecting the brain or meninges, certain conditions involving impairment of the circulation to the brain, and finally, idiopathic, cryptogenic or genuine epilepsy. While the exact physiologic mechanism of the convulsions is not as yet known for any of these conditions, recognition of the fact that an organic lesion of the brain is not essential for the occurrence of either *petit mal* or generalized seizures, and that physiological or chemical disturbances can in themselves be the cause of seizures, is undoubtedly a first step toward a solution of the problem involved.

In spite of the fact that the primary etiologic factor is different in each of the above-named conditions, the generalized convulsion itself appears outwardly to be the same in all cases. From this we might expect certain features of the underlying physiological mechanism to be the same in all instances, and such actually appears, from the limited data available, to be the case. These common features, as well as certain differences, will be referred to later. Since time does not permit a detailed discussion of the mechanism and treatment

* From the Department of Pediatrics, University of Minnesota, Minneapolis, Minnesota.

* Guest-speaker paper. Read before the general meeting of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934. This paper will be printed in two parts.

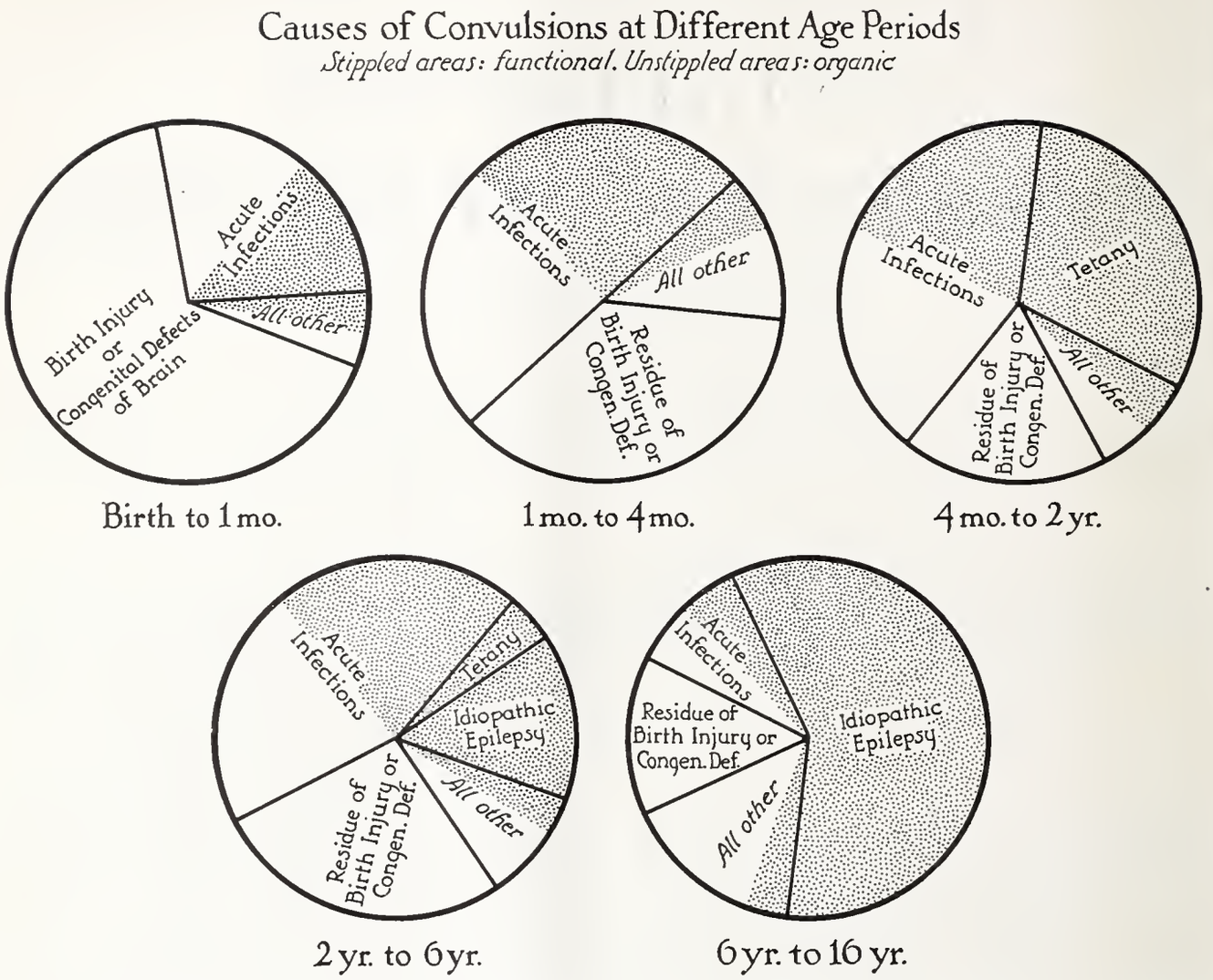

Fig. 1.—Schematic representation of the etiological distribution of patients admitted to the average pediatric clinic with the complaint of convulsive seizures.

of each entity under consideration, the results of recent studies on idiopathic epilepsy, the least well understood but most important representative of the group, will be presented.

In the way of definition, the admittedly unsatisfactory term "idiopathic epilepsy" will be employed to denote a particular type of convulsive disorder which is characterized by its chronicity and by the obscurity of its underlying etiology. The current fashion of using the term in a generic sense to group together all conditions in which convulsions occur is confusing and leaves the particular type of case under discussion inadequately defined. While it is true that the size of the group once classified under the diagnosis of idiopathic epilepsy has gradually been diminished with advances in our knowledge, the culling process has only increased our awareness of the fact that there still remains a large number of clinically similar cases, having in common an abnormal proneness to convulsive seizures for which no organic or physiological basis has as yet been demonstrated. In the following pages the two closely related aspects of the epilepsy problem, etiology and treatment, will be considered.

ETIOLOGY

The intrinsic nature of the subtle constitutional factor, which is responsible for the epileptic's characteristic proneness to seizures, constitutes the unsolved etiologic problem of this convulsive state. No matter from what angle the problem is approached, one is invariably led to the same ultimate conclusion, that the chronic spasmophilic tendency is due to an inherent abnormality in the mode of functioning of the brain cells. There may well be some underlying defect in the chemical structure of these cells to account for their erratic behavior; but thus far, histochemical technique has not been sufficiently refined to detect this. Some indirect evidence referred to below indicates that the characteristic deficiency is one relating to the semipermeability of the brain cell membrane.

Whatever the nature of the abnormality may be, it appears to be firmly fixed in the germ plasm, and shows an unmistakable tendency to pass from generation to generation by inheritance, as shown by the recent report of Lennox and Cobb.[1] The inheritance factor appears from the work of these authors to be vastly more important in cases of epilepsy beginning in childhood than in those having their onset after the age of twenty years. Davenport and Weeks [2] regard it as a Mendelian recessive due to "absence of a protoplasmic element."

Contributing Etiologic Factors.—In addition to the underlying abnormality just referred to as being responsible for the increased "con-

TABLE 1.—*Average Values Per Hundred Grams of Various Foods Used in the Ketogenic Diet*

Food Material (Edible Portion, Fresh State)	Fat Gm.	Protein Gm.	Carbohydrate Gm.	Calories	Water Gm.	Excess in Ash	
						Acid cc. 0.1 N	Alkali cc. 0.1 N
Forty per cent cream	40	2	3	388	54	....	25
Butter	85	....	....	790	15	....	....
Special French dressing	62	....	2	585	35	90	....
Special mayonnaise dressing	67	3	1	640	28	77	....
All food oils	100	....	....	930	....	....	....
Bacon—medium lean	65	10	....	645	20	65	....
Pork chops or fresh ham—medium fat	25	16	....	300	54	95	....
Beef, mutton or turkey—medium fat	20	18	....	260	60	110	....
Chicken, fish, wild game, tongue, veal—lean	5	19	....	125	72	125	....
Shell fish	1	16	3	87	80	90	....
Cheese—American, Cream, Swiss	33	28	1	420	30	....	6
Cottage cheese	1	21	4	115	72	....	40
Milk "substitute"	20	4	1	204	74	....	50
Casein (Casec)	1	88	....	366	....	....	....
Gelatin (dry or D'Zerta)	....	84	....	340	14	....	....
Eggs, hens'	12	13	....	164	73	160	....
Egg white	....	12	....	49	86	52	....
Egg yolk	33	16	....	372	49	267	....
Brazil nuts	67	17	7	721	5	....	50
Butter nuts	61	28	4	698	4	....	50
English walnuts	64	18	12	718	3	....	65
Green olives	13	2	2	137	75	....	200
Avocado (alligator pear)	23	2	7	243	66	....	75
"Five per cent" vegetables and fruits: (Lettuce, cucumbers, spinach, asparagus, beet greens, celery, mushrooms, watercress, cabbage, radishes, grapefruit, rhubarb, tomatoes)	....	1	3	16	92	....	65
"Ten per cent" vegetables and fruits: (String beans, squash, turnips, beets, cauliflower, onions, carrots, pumpkin, lemons, oranges, strawberries, muskmelon, peaches, pineapple, blackberries, watermelon)	....	2	6	32	88	....	75
"Fifteen per cent" vegetables and fruits: (Green peas, parsnips, young lima beans, artichokes, raspberries, currants, apricots, pears, apples, blueberries, cherries)	....	2	15	69	80	....	65
Yeast powder (Mead's)	1	48	39	280	5	....	....

vulsive reactability," there are numerous factors which may contribute to the occurrence of seizures, presumably by accentuating the abnormal tendency already present. Chief among these are brain trauma, emotional disturbances, any impairment of the intracranial circulation, anoxemia, shifting of the acid-base equilibrium toward the alkaline side, lowering of the ratio of cholesterol to lecithin in the blood plasma and, finally, a positive water-balance with dilution of the body fluids.

Injury to the Brain.—Injury to the brain and its coverings is undoubtedly a potent factor in bringing out the latent tendency to seizures. Reflex or direct irritation, whether mechanical, toxic or infectious in origin, tends to lower the convulsive threshold. Emotional upsets frequently have a similar effect, particularly in some cases of the *petit mal* type. The possibility has been suggested by Cannon that strong emotion, having its neural basis in the diencephalon, might cause discharges of impulses from the latter to the motor cortex.

Disturbances of Intracranial Circulation.—That disturbances of intracranial circulation may play a prominent part in the causation of seizures has long been suggested by the fact that the skin and

TABLE 3.—*Correlation Between Changes in Plasma Lipids and Occurrence of Convulsions on Various Dietary Regimens*

Successive Regimens (H_2O ad lib.)	Total Fatty Acids	Lecithin	Cholesterol	Lecithin Cholesterol	Convulsions
Ordinary Mixed Diet	210 220 259	102 103 99	83 80 79	1.25 1.28 1.25	Several daily
After 11 days on F., 149; C., 9; P., 36 g. (acid ash)	270	125	113	1.10	None for seven days
Temporary high carbohydrate intake	340	141	95	1.49	Two hours before and one hour after sample
After 5 days on F., 149; C., 9; P., 36 g. (alkaline ash)	313	151	102	1.38	Sixteen during five days
After 6 days on F., 170; C., 0; P., 55 g. (ketogenic)	383	175	208	0.84	None for five days before and three days after sample
After 3 days on F., 110; C., 0; P., 200 g. (non-ketogenic)	460	225	133	1.69	One hour before and one hour after sample

mucous membranes of some epileptic subjects are known to become pale just prior to the onset of a convulsion. During brain operations under local anesthesia, Kennedy, Penfield, Foerster and others have repeatedly observed blanching of the exposed brain at the onset of generalized convulsions; which suggests that reflex spasm of the cerebral arterioles might be an important factor in some instances. The objection to this being regarded as the primary cause is its inconstancy and the lack of proof that it is not itself an initial effect of the seizure, rather than its cause. Another obstacle in the way of accepting the circulatory theory of etiology for epilepsy is the recent finding of Cobb, Gibbs, and Lennox [3] that the volume flow of blood through the brain in relationship to seizures is not abnormal, as determined by the use of a delicate thermo-electric blood-flow recorder. While severe asphyxia may cause convulsions, there is no outward evidence for the existence of this condition before the onset of a genuine epileptic seizure, and temporary mechanical pressure applied to the jugular veins is apparently no more likely to induce a convulsion in an epileptic than in a normal subject. While dysfunction of the *vegetative nervous system* might be expected to play an accessory part in the seizure mechanism of idiopathic epilepsy through interference with the circulation to the brain, the small group of patients described by Weiss and Baker [4] as having convulsive reactions or fainting attacks due to hyperactivity of the carotid sinus reflex cannot be regarded as genuine epileptics, because seizures can be induced in the latter but rarely, if ever, by pressure over the sinus.

Endocrine Function. — That some abnormality of the closely related endocrine functions might contribute to the onset of epileptic attacks is naturally suggested by the fact that hyperinsulinism (or its equivalent, the underaction of the diabetogenic hormone of the hypophysis) and hypoparathyroidism, are both known to cause convulsive seizures in the absence of any pathological lesion in the brain. As will be shown under another heading, seizures can be induced almost at will in epileptic subjects by administration of antidiuretic pituitary extract, if this is given under conditions favorable to the establishment of a strongly positive water-balance. Overdosage of epinephrin will also cause convulsions in normal animals. However, there is no convincing proof that any of the glands of internal secretion are characteristically abnormal in epilepsy.

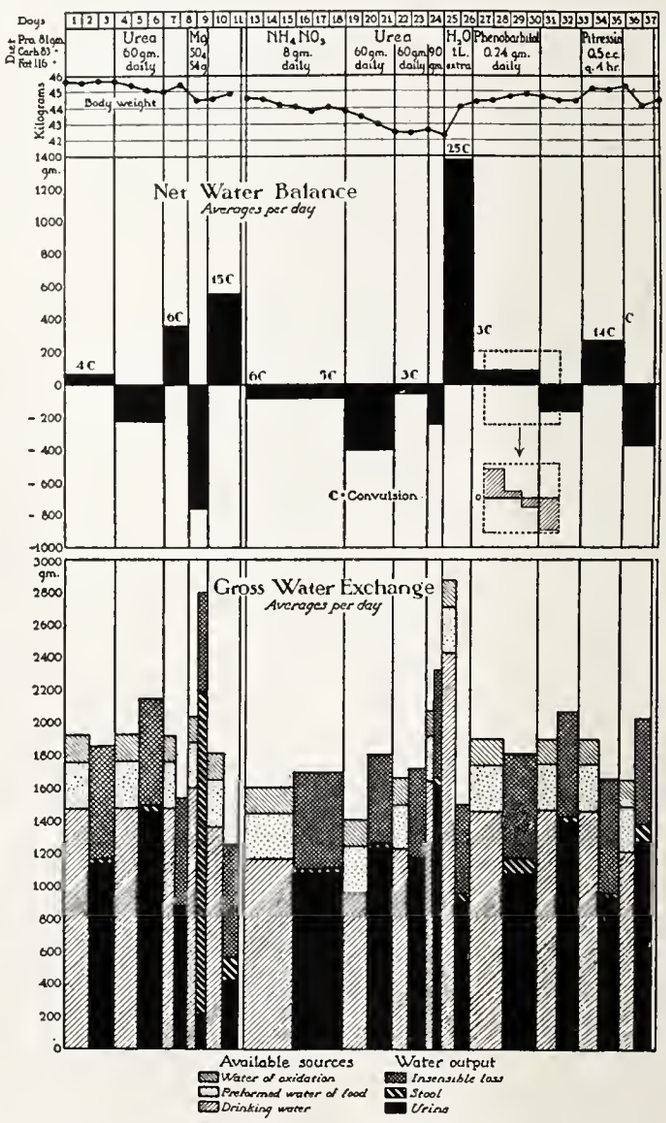

Fig. 2.—Relationship of water balance to occurrence of convulsions (C) under various conditions.

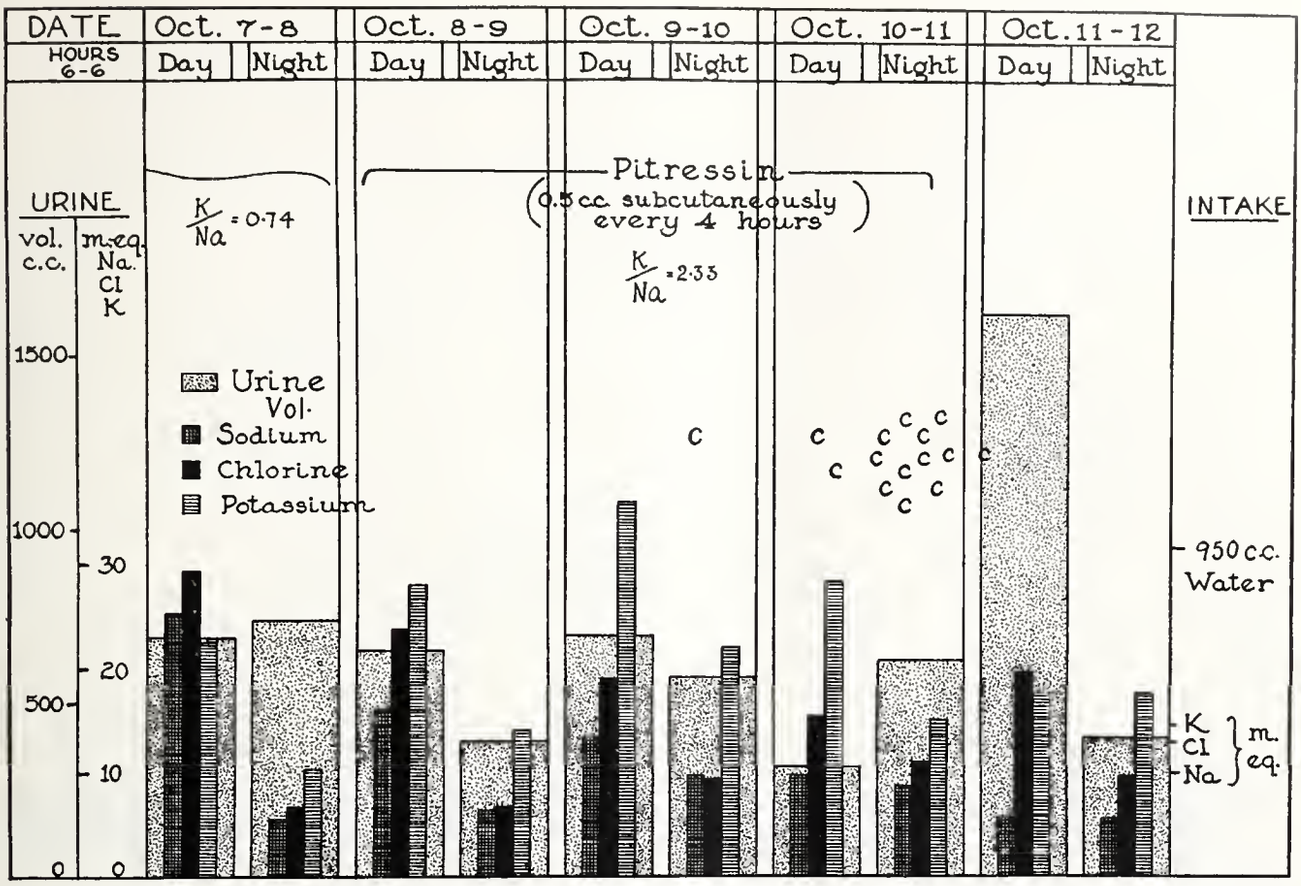

Fig. 3.—Water, Na, K and Cl balances in relationship to occurrence of convulsions (C) induced by sustained pituitary antidiuresis.

Anoxemia.—Anoxemia is thought to be the important abnormality responsible for the convulsions of cerebral anemia or asphyxia. Lennox [5] has found that the ease with which seizures can be induced in epileptic patients by voluntary hyperventilation of the lungs is greatly increased if the subject is placed in an atmosphere with reduced oxygen tension. Oxygen tensions above those of the ordinary atmosphere lessen the tendency for seizures to follow hyperventilation, but do not appear to inhibit spontaneous seizures. Up to the present time, however, no characteristic abnormality of the respiratory functions has been discovered in epilepsy. Nevertheless, any serious interference with the supply of oxygen to the brain cells tends to favor the occurrence or seizures, unless this effect is simultaneously offset by an increase in the hydrogen ion concentration of the system, as it may be when air is rebreathed.

Acid-Base Equilibrium.—That the acid-base equilibrium of the body fluids might bear some relationship to the occurrence of convulsive seizures was suggested by the well-known fact that alkalosis increases, while acidosis decreases nervous irritability. Certain workers in Copenhagen, and later several in America, presented evidence of an unstable acid-base equilibrium in epileptic patients, which was most noticeable just prior to the onset of seizures. More dependable proof than that afforded by these observations, however, is the well-recognized fact that procedures which cause alkalosis (such as the administration of alkaline salts, hyperventilation of the lungs and prolonged vomiting), tend to induce seizures; while those factors which cause acidosis (such as diarrhea, fasting, a ketogenic diet, ingestion of mineral acids or acid-forming salts and breathing an atmosphere high in CO_2) all favor the cessation of seizures. The convulsion itself is terminated by the development of the endogenous acidosis arising from retention of CO_2 and extra production of lactic acid from violent muscular contractions. Alkalosis not only increases nervous irritability, but may interfere with brain circulation by virtue of the fact that it causes contraction of the smaller arterioles.

Lipid Economy.—Recent studies on the lecithin, cholesterol and total fatty acids of the blood in relationship to seizures indicate that there may be some obscure abnormality in the lipid economy in epilepsy.[6] While no constant relationship has been found to exist between the absolute level of any lipid fraction and the occurrence of seizures, the lecithin-cholesterol ratio shows a striking tendency to be higher at, or near the time of convulsions than at other times. (See Table 3.) This tendency for seizures to be related to high lecithin and low cholesterol concentrations may find a rational interpretation in the known effects of these two physiologically antagonistic substances, which occur in unusually high concentration in brain cells. Cholesterol, when injected intravenously, produces profound narcosis and active diuresis. Lecithin exhibits almost opposite effects, for, when it is administered parenterally in conjunction with a narcotic, it shortens the period of

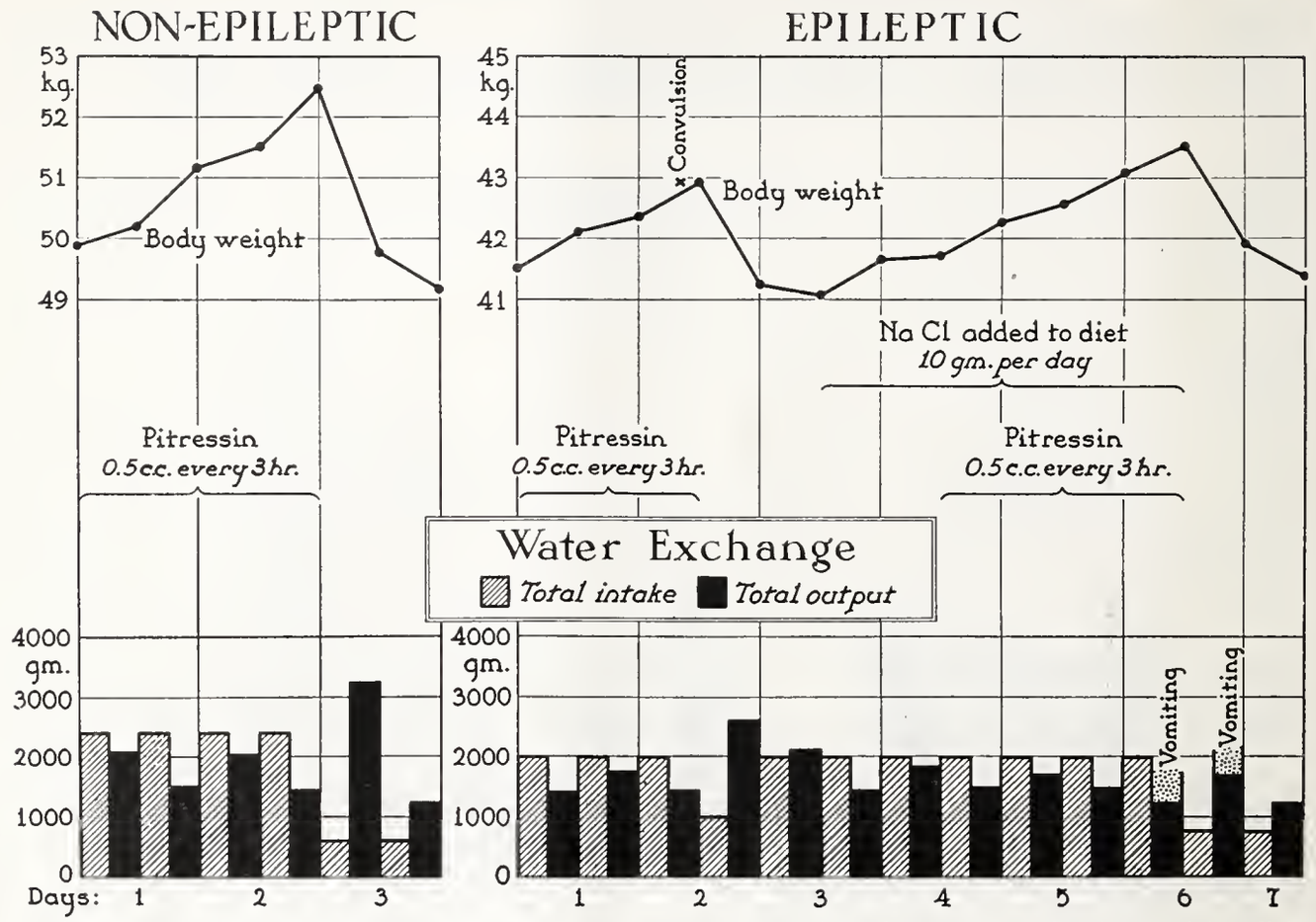

Fig. 4.—Effects of sustained pituitary antidiuresis in mild epilepsy with salt-free and with salt-containing diets. (See text.)

narcosis. When given with a convulsant drug, such as strychnin, lecithin diminishes the convulsive dose. It likewise tends to cause a retention of water in the body. Several of the current theories of narcosis and sedation take into account equilibria involving the various cell lipids, particularly in connection with the concept of cell membrane permeability. Comparative analyses of the brain tissue of epileptic and non-epileptic subjects of similar ages are being carried out in our laboratory with the hope that they may shed additional light on this phase of our problem. In this connection it may be significant that brain tissue normally contains more than twice the concentration of cholesterol during adult life that it contains during early childhood, the period when susceptibility to convulsions is highest. The concentration of lecithin, on the other hand, is almost as great in the brain of the young child as in that of the adult.

Water-Balance.—The significance of the water-balance in relationship to the occurrence of seizures in epilepsy has long been suspected from the fact that the brains of patients dying in *status epilepticus* show an increased water content. Even Hippocrates appreciated this relationship, for in his classical treatise on "The Sacred Disease" he states, "Whoever is acquainted with such a change (epilepsy) in men, and can render a man humid and dry, hot and cold by regimen, could also cure this disease." It has recently been found to be true that procedures which cause a negative water-balance in the body (such as restriction of the water intake, diuresis, catharsis, profuse sweating, starvation, use of a ketogenic diet and administration of acid-forming salts) tend to prevent seizures. On the other hand, retention of water under certain conditions favors the occurrence of convulsions.

The mechanism of this relationship is not well understood. Fay,[7] who first reported the clinical effects of water-restriction on cases showing encephalographic evidence of cortical atrophy, maintains that the effect of water retention is purely mechanical. This belief is based on his assumption that disease of the Pacchionian bodies is characteristic of epilepsy, and that fluid accumulates under increased pressure in the cortical subarachnoid spaces because its absorption by way of these structures is impaired. These claims have not been substantiated by other workers.[8, 9, 10] The accompanying charts (Figures 2 and 3) show data from studies on the water and mineral balances in relationship to the occurrence of seizures, which permit of quite a different interpretation.[11]

The purpose of the study reported in Figure 2 was to determine the effect of changes in water-balance upon the occurrence of convulsions when other factors than water restriction were employed to modify the water exchange. The experimental subject was a thirteen-year-old girl who was known to have from two to fifteen convulsions daily when not under intensive treatment. She was kept in the metabolism ward on a constant non-ketogenic diet. It is obvious, from the upper portion of the chart, that the essential factor

TABLE 4.—*Parallelism Between Effects of Various Factors on Permeability of Brain Cell Membranes and on Occurrence of Convulsions in Epilepsy*

Permeability		Physiological Factor	Convulsions	
Increased	Decreased		Induced	Prevented
....	X	Narcosis	....	X
....	X	Sedation	....	X
....	X	Acidosis	....	X
....	X	Dehydration	....	X
....	X	Ketosis	....	X
....	X	High bl. cholesterol / bl. lecithin	....	X
X	....	Excitation	X	....
X	....	Trauma	X	....
X	....	Alkalosis	X	....
X ?	....	"Superhydration"	X	....
X	....	Anoxemia	X	....
X	....	Low bl. cholesterol / bl. lecithin	X	....
X	....	Hypocalcemia	X	....
X ?	....	Hypoglycemia	X	....

in the reaction is the net, rather than the total, water exchange. While a strongly negative water-balance, produced in a variety of ways, resulted in a cessation of seizures, these always recurred within twelve to thirty hours following the re-establishment of a positive balance. Even those which occurred at the beginning, and toward the end of the NH_4NO_3 period, actually followed temporary water storage, which is not indicated in the chart.

A simultaneous study of the mineral exchanges showed that sodium and chlorin were in negative balance during all periods, showing a net loss of body water, but were stored during periods of positive water-balance. Potassium excretion, on the other hand, was greatly increased during periods of water storage, a negative balance appearing even before the onset of seizures. This is illustrated in Figure 3, which shows the K, Na, Cl and water-balances just before, during and after the pitressin period. Since most of the potassium of the body occurs within the cells, it is practically certain that a strongly negative balance of this element indicated leakage from the cells into the extracellular fluids from which it is excreted, chiefly by way of the kidneys. A non-epileptic subject did not show this phenomenon under identical conditions. From these and other data, yet to be presented, it may be assumed that sudden reëstablishment of a positive water-balance, following a period of net loss, is accompanied in the epileptic subject by a severe disturbance of the electrolyte equilibria on the two sides of the brain cell membranes. The cells probably imbibe extra water under these conditions. The abnormal reaction is apparently accentuated by sustained pituitary antidiuresis.

In a special study of the latter effect in mildly epileptic, as contrasted with non-epileptic subjects, it was found that seizures could be induced almost at will in the majority of the former, but not at all in the latter by administration of posterior pituitary extract at three-hour intervals during periods of high water and low mineral intake.[12] That the seizures so induced were due to alterations in the water and electrolyte exchanges, rather than to the vasopressor action of the extract, was indicated by the fact that they occurred only after the amount of water forcibly retained became equal to between 2 and 5 per cent of the body weight. It has been shown that the extracellular body fluids undergo a considerable degree of dilution under these conditions. Prevention of this dilution by the simultaneous administration of just sufficient NaCl to bring the fluid retained to isotonic concentration interferes with the induction of seizures by this procedure, as illustrated in Figure 4. Prolonged dilution of the body fluids undoubtedly results in a disturbance of the electrolyte equilibria in a direction favorable to an increase in nervous irritability. The mechanism of the well-known therapeutic effect of bromids in epilepsy may ultimately find an explanation in the action of the Br ion in preventing dilution of the intracellular fluids of the brain. This is suggested by the recent demonstration by Notkin, Garcia and Killian,[13] that administration of bromids causes an increase of from 15 to 36 per cent in the total halogen concentration in blood cells. Preliminary studies made in our laboratory indicate that there may be a similar storage of Br in brain tissue, following intensive bromid medication.

The apparent migration of potassium ions from the body cells (brain) of the epileptic prior to and during the course of seizures, and the observation that the epileptic cannot withstand dilution of his extracellular body fluids without having

seizures, have together been interpreted as indirect evidence of defective brain cell membranes. Confirmatory of this tentative view is the fact that the majority of factors which tend to induce seizures are alleged to increase cell membrane permeability, while those which tend to prevent their occurrence are known to decrease permeability. These factors and their effects are summarized in Table 4.

When one surveys the conceivable defects of the brain cells which might reasonably account for the abnormal convulsive reactability of the epileptic patient, there is no other which appears to satisfy all of the requirements so well as that implied in the foregoing interpretation. As a working hypothesis, therefore, the generalization, that the epileptic differs from the normal subject in exhibiting an innate defect in his brain cell membranes, possesses some practical value in that all therapy may be directed toward correcting such defect or producing a decrease in permeability. It is obviously necessary to consider all of the foregoing etiologic factors in relationship to each other before accurate interpretation of a response to any single factor can be made. Under ordinary conditions there is present at any given time a multiplicity of contributing factors, some tending to provoke, others to prevent seizures. Whether or not a seizure will occur, then, depends upon the relative strength of the provocative as against the preventive forces.

From the meager data already available regarding the brain cell changes in the non-organic convulsive disorders other than cryptogenic epilepsy, it can merely be remarked that there apparently tends to be an increased water content in relationship to seizures in those types which have been studied. Drabkin [14] has shown that the brain swells due to water imbibition before convulsions occur from insulin overdosage. Preliminary dehydration prevents such convulsions. Baar [15] observed an increased water content in the brain tissue of subjects with infantile tetany, and considers this increased hydration to be of primary significance in the causation of convulsions in this condition. Ellis [16] independently reported a similar increase in the water content of the brain in guanadine tetany and in experimental hypoparathyroid tetany. We have recently determined that a positive water-balance favors the occurrence of convulsions in a case of idiopathic parathyroid tetany. The "hard" edema (intracellular?) of the brain found in cases of acute nephritic uremia and in eclampsia of pregnancy, is probably of considerable importance in the convulsive mechanism in these disorders. Alkalosis tends to provoke convulsions in latent infantile or parathyroid tetany, while acidosis has the reverse effect. The effect of calcium deficiency in the body fluids in tetany may be responsible for a decrease in nerve cell membrane permeability; but, if this exists at all, it must be temporary, disappearing in response to antitetany therapy.

(To be continued)

HOW CAN PSYCHIATRY PROGRESS?*

By Clifford W. Mack, M. D.
Livermore

THE honor of being chairman of this section carries a penalty, or rather an obligation, to present something at the meeting that furthers progress in our specialty. The chairman is allowed by custom to cover a wide range, rather than choose the limitation of a definite scientific subject. If, by taking advantage of this privilege, the remarks are discursive, it is for the purpose of pointing out some of the pressing needs confronting us.

THE NEUROPSYCHIATRIC SECTION

My responsibility would not be adequately fulfilled if I did not say something pertaining to the welfare, growth and development of this section of the California State Medical Society. We all have a duty that should not be left entirely to the officers who come and go each year, to make this section an important scientific body of the parent society. The importance of neuropsychiatry in the practice of medicine is well recognized and needs no defense. The men and women in the state engaged in this branch of medicine should take a greater personal interest in our meetings by attendance and participation in the discussions. The papers presented should only be the introduction that develops a free interchange of ideas. The members of the state and government hospital staffs are earnestly urged to take a more active part in the affairs of this section, as their presence at the meetings would add to the value of the scientific program, with benefit to themselves and their associates in the field of psychiatry. These members of the section have under their care in the state hospitals half of all the hospital patients in the state. The medical profession is more and more looking to psychiatry for assistance in clinical work. The public social agencies, and the various educators are calling upon psychiatry to lead in the solution of some of the problems of human behavior. In addition to all of this, there are a large number of patients going through the private offices of neuropsychiatrists as mild psychoses and psychoneuroses. The sum total of our endeavors is a vast part in the care of sick and handicapped people, and hence our section should be one of the most important in the society.

The section was organized on May 20, 1916. It is worthy of mention that the number engaged in our specialty in California, as judged by membership in the American Psychiatric Association, has increased from nineteen in 1913 to fifty-nine in 1933. The work of the section should proportionately increase so that it will be truly representative of the large field which it covers.

STATE HOSPITAL SERVICE

Mindful of my days in state hospital service, I cannot neglect the duty of calling your attention to the obligation we have toward those hundreds

* Chairman's address, Neuropsychiatry Section of the California Medical Association, at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

of unfortunates in these institutions entrusted to our care. There are about 18,000 mental patients in the state hospitals whose woe or weal may depend upon the interest manifested in them by this section. We share responsibility with those directly in charge of them because this body of specialists can exert a powerful influence upon the state program. The state hospitals of California are among the best, from the standpoint of physical construction, administration and medical service, in the United States. They are directed by capable superintendents and staffed by medical men of high caliber. We should be vigilant to see that political interference does not disturb this situation. It is in our power to impress upon the state government the desirability of upholding conditions in the state hospital service, to the end that superintendents will have the authority to maintain the present high standards of psychiatric practice.

Fortunate we are, in California, to have a Department of Institutions headed by a physician rather than a non-medical man, and one who does not carry his burdens lightly. The hospitals under the direction of this department are progressive and efficient, and they are giving to their charges humane and benevolent care. There should be, however, in this state a psychiatric program that permits not only efficient handling of current problems, but one that incorporates research investigation into the cause and treatment of mental diseases. This cannot be fulfilled without complete separation of political and medical administration. We could well emulate other states, such as Massachusetts, with a permanent director in charge of the psychiatric system. This could be accomplished by a political board of six members to answer the needs of our system of state government. If the members of this board served a term of six years, two members retiring every two years, there would be continuity through changes of administration. The board could then appoint the director or commissioner, whose sole interest would be the hospitals under his jurisdiction. As a further step, the superintendents of institutions should be under Civil Service, and thus free from the danger of removal by changing political parties. It will be impossible to enlist good men to engage in state hospital service as a life's work unless some security and permanency can be given to them.

As chairman of this section, I would recommend that we have a committee on legislation whose object would be the accomplishment of these purposes. This committee could work with the Council of the State Society, or in an independent capacity if the Council agreed. The necessary legislation can only be accomplished through the weight and influence of organized medicine as expressed by the State Association.

THE ENLARGEMENT OF STATE HOSPITALS

A great need in the practice of psychiatry by the state is an enlargement of hospital facilities. I am informed that there is an overcrowding of almost 30 per cent in our hospitals at the present time. This large, wealthy state should not allow its duty to the mentally ill to be neglected by false measures of economy. The proper treatment and care of sick people cannot be accomplished if the facilities are overtaxed to this extent. The new institution planned will only give temporary relief. A large building program, possibly a state bond issue, or money from the Federal Government, is urgently required at this time. The members of this section should exert their influence toward the accomplishment of this project through their individual efforts, and collectively through the legislative committee just mentioned.

STATE PSYCHOPATHIC HOSPITAL

The advancement of psychiatry in the state can be augmented by a state psychopathic hospital. The members of this section have advocated and sponsored such an institution for many years. It should be incorporated in any building program that is contemplated. We have examples of the benefits of the state psychopathic hospital in those states where they have been in operation for several years, so that little need be said in discussing its merits. The state psychopathic hospital would serve as a place for scientific exploration of psychiatric problems. The influence upon the medical work of the state institutions would be decidedly beneficial. The returns in years to come in the reduction of the total number of patients by preventive measures, the discovery of new methods of treatment, the saving in total amount of hospitalization, etc., would readily pay for the initial expense. The state psychopathic hospital in California should be located near the two medical schools, so that it would have the benefit of their various departments, and serve as a teaching center in psychiatry for students. The proper education of the doctor going into practice will do more to extend the benefits of psychiatry than any other measure.

COMMITMENT LAWS

There is a great need in California for a reformation in our commitment laws. Dr. Glenn Myers and other members of a self-constituted committee almost successfully waged this battle at the last state legislature. We cannot adequately practice psychiatry without proper legal machinery. We require not only a better mode of commitment to the state hospitals, but a means of controlling our private patients. A psychiatrist in practice needs the resources of a hospital for his patients, the same as a surgeon or medical man. What would surgery be able to accomplish if there were no hospital facilities to provide the surgeon and patient with those essential services? The psychiatrist in practice needs the therapeutic adjuncts that can be supplied only through an institution, but these are not available to the patient unless the patient can be legally placed there. The modifications in the commitment law, as proposed at the last legislature, contemplated the following things: temporary commitment for purposes of observation upon the affidavit of two physicians; discontinuance of arraignment; a hearing without the patient present; detention in a hospital, rather

than a jail; and transportation under care of hospital attendants.

I would add to these: Machinery for commitment of patients to private hospitals that are licensed and supervised by the State Department of Institutions. Every psychiatrist has experienced difficulties with certain borderline patients, whose standing in the community might speak against commitment to a state hospital or whose family would object. These patients are denied the benefits of hospitalization because of the legal obstacle that courts in California cannot commit to a private institution. The appalling number of suicides among prominent people might be diminished, if these patients could be sent to a place for proper care without going through the present cumbersome method of commitment, and then only to a public institution. The sponsorship of a new commitment law by this section could also be made effective by the Legislative Committee.

AFTER-CARE

There is need in the state and private practice of psychiatry for more attention to the after-care of patients. We have rather complacently accepted the belief that recovered or arrested psychoses are doomed to recurrences, particularly in the manic-depressive group. This conception can be seriously questioned. The labor and expense of carrying an acute case through the various phases of a mental illness can very easily be lost if our efforts cease at this point. Kraeplin long ago deduced from his wide statistics that only 50 per cent of manic-depressive patients had more than one attack.

I believe that in many instances recurrences happen because complete recovery is not attained before the patient resumes the regular activities of life. The best insurance against another attack is a genuine recovery, and a convalescence that keeps the patient out of the complexities of life until full restoration has been accomplished. The delicate machinery of the mind needs time and opportunity to readjust after an acute illness, the same as a decompensated heart needs adequate rest. The internist will keep a patient on a low expenditure of physical effort for many months after an acute illness, and we should follow the same principle with our mental patients. Allowing a patient to assume normal activity before proper stabilization, places a handicap that in a few months or years leads to another collapse.

The state agencies, although they now have social service departments, should provide more extensive after-care for the state hospital cases. This would undoubtedly prevent many recurrences and make possible a larger number of paroles, and thereby ease the burden upon the tax-supported institutions. In addition to the state patients, the neuropsychiatrist in his office practice could extend his activities to give more careful supervision of recovered cases. I have of late years placed special emphasis upon follow-up work, and find that families and patients both are very appreciative of the interest taken. The patient who is seen at monthly intervals is not only helped to a state of better adjustment with problems, but may be spared another attack by the adoption of adequate measures when onset symptoms are presented.

MENTAL HYGIENE AND THERAPY

There is a need in psychiatry as a whole for an inventory of our armamentarium in the field of mental hygiene and therapy. Mental hygiene, so called, has concerned itself largely with surveys of psychiatric work being done throughout the country, with the application of the knowledge of psychiatry to social problems and with the betterment of care of patients in hospitals. There has been but little done in the field of individual mental hygiene or the development of a positive technique. If we are to fulfill our obligation as psychiatrists, we must formulate a constructive mental hygiene that will enable us to aid patients when they come to us feeling the disturbing influence of mental difficulties. The utterance of aphorisms, such as "Stop worrying," "You must pull yourself out of this," "It's up to you," etc., has often led to suicide, or the utter despair of the patient in the early stage of melancholia. We tell the patient that we understand the mechanism of the mental changes taking place, but as a matter of fact, do we? This positive assurance from a medical man may allay the fear, and can by suggestion create in the patient a feeling of faith and confidence; but if this does not occur, what other resources do we possess? The consideration of environmental influences may be enlightening, and the need of correction obvious to the patient as well as to the physician; but so often these cannot be changed. We have been preaching the importance of the early recognition of mental deviations, so that the public now expects definite results from our efforts. Some workers in the field of mental hygiene state that nothing tangible has been contributed, to date, in the sense of individual mental hygiene, and all that has been done is to point out that infancy and childhood represent the only period susceptible to modifying influences. Further, and as a corollary to this, parental education represents the only mode of attack. We cannot, however, take our adult patients back to that stage of life, and in most cases we cannot change the parental influence. We do not need to be unduly pessimistic, however, as it may be possible to treat this, as any other clinical problem, from the standpoint of the vital functions of the body and brain, and devise methods of altering the same. In addition to such measures, as the regulation of the patient's daily life by prescribed rest, proper occupational placement, the effort to acquire adequate emotional balance, study of the physical health, etc., means may be devised to formulate a constructive mental hygiene technique.

TREATMENT

The treatment of our mental patients leaves much to be desired. Aside from the application of rest, physiotherapy and occupational therapy to the functional cases, we do nothing except allow nature to take its course, hoping that we are dealing with a recoverable case. The diagnosis of a

malignant psychosis so many times condemns that patient to custodial care without any attempt at treatment. Psychiatry must justify its place in medicine in the years to come by more efficacious therapeutic methods. We have a stimulating example of what can be done when we review the history of the treatment of paresis. It was not many years ago that with the making of the diagnosis, sentence of death was passed upon the patient, as far as any effort on the part of the physician was concerned. What was formerly an incurable condition is now considered recoverable, by means of malaria, to the extent of 33 per cent. Why should we adopt a negativistic attitude to the so-called incurable forms of functional psychoses?

There is an urge at present to a greater use of psycho-analysis. This method is not suitable for many psychotic patients, and because of the time-consuming element cannot be applied at all where there are a large number under a physician's care. Psycho-analysis should by no means be considered the last and final resource. It only dissects, after all, and describes more minutely the mechanism of the symptoms after the mental disturbance has occurred. There is still back of all this a physiological alteration in brain functioning that causes the development of complexes, etc. We have not explored this field to its fullest extent. The study of the circulation in the brain, the mechanics of spinal fluid circulation, neuronic activity, the effect of certain medicinal agents upon mental functioning, should have serious consideration.

It is conceivable that in our functional psychoses some means can be devised whereby the brain activity can be decidedly altered. Why should an individual who has been functioning normally, develop a condition of mind that permits the assumption of control by the subconscious rather than the conscious? This can just as well be explained on the grounds of a physiological disturbance as a psychological one. Histological investigations have not contributed much up to date in this regard, and probably there are no structural changes other than molecular. If by means of some chemical or physical agency neuronic activity can be altered, there may be a restoration of that intangible thing which we call nervous energy. I am impressed, more and more, by the belief that many functional psychoses are exhaustion syndromes. There may be a storehouse some place for nervous energy, the depletion of which causes abnormal psychic manifestations. Physiological functions of the brain and nervous system are undoubtedly altered in all of our psychoses, even though structural changes are not revealed in the cellular elements. Is it not conceivable that the mental operations may be affected by some clinical measures? If we treat a heart disease, efforts are made to augment the action of the heart muscle. In like manner may we not influence brain function by a more direct mode of attack?

The purely psychological methods take into consideration the effect upon psychic structure of the exigencies of life and the modifying influences of certain experiences. These, after all, are not so different in kind in individuals, and hence some deeper reason for the break-down of mental action must be discovered.

The writer has long cherished the hope that something of an accurate scientific nature would be discovered in regard to the character of neuronic activity in the brain. It is possible that this has been accomplished by Professor Berger[6] of Jena. He has demonstrated that action currents exist in the brain, and that these differ during the stages of brain development. Also, that there are variations in individuals and in certain mental states. He further shows that there are constant electrical fluctuations associated with the activity of the cerebrum. These are absent in the newborn, and during the first few weeks of life. The curve of the fluctuations has a distinct form for each adult. They continue during sleep, but not in states of unconsciousness or anesthesia. The waves are greatly changed in mental diseases.

It is conceivable that clinical and laboratory investigation may yet reveal a means to influence the psychic functions of the brain. To illustrate my point by brief mention of some data already available: The brain uses exclusively carbohydrate as a source of energy even in the absence of insulin (Himwich and Nahum).[1] How often do we see improvement in certain psychoses only when there is a gain in weight? Blood calcium and phosphates (Henry)[2] increased in manic states and decreased in depressions. Caffein (Denker)[3] lowers cerebrospinal fluid pressure 36 per cent after intravenous injections, with a return to normal in thirty-seven minutes. Histamin (Forbes, Wolff, Cobb)[4] in animals produced dilatation of brain vessels and cerebrospinal fluid pressure rises. There are other drugs and chemicals, the effects of which have been long known, too numerous to mention, such as alcohol, adrenalin, pituitary extract, amyl nitrate, etc. These are the types of pharmacological investigation that we most need. The proper exhibition of some of these drugs may lead to a method of therapy that would assist in the restoration of normal physiological function.

It seems worth while to call attention to some forms of special or empirical treatment in dementia praecox that may have merit, such as production of asceptic meningitis (Carroll),[5] the use of foreign protein, and the production of a leukocytosis by the use of Lundvall's solution or hemoprotein.

In conclusion, then, these are some of the needs of psychiatry, and I have tried to point out the roads along which we may progress. The development of a more energetic and positive therapeutic program for all types of patients will result in extension of our knowledge. If we only succeeded in discovering methods that would cure a small number of malignant psychoses, or materially lessen the duration of self-limited cases, there would be an enormous economic saving and great credit to psychiatry. We sometimes think that neuropsychiatry is being encroached upon by many of the other specialties, such as psychology, general medicine, syphilology, and neurosurgery. This should not cause us any alarm, but rather a feel-

ing of pride, and stimulate us to seek new truths to incorporate in the service we may render. The place of neuropsychiatry in medicine will not be jeopardized if we use intelligently all the resources at our command, and diligently seek new fields of usefulness.

Livermore Sanitarium.

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BAD ANESTHETIC RISKS—THEIR MANAGEMENT*

By John Miller Wilson, M. D.
Pasadena

WITH the proper selection of anesthetic agents, and their scientific administration, there should be little need for a paper dealing with bad anesthetic risks. There are very few patients who cannot take a properly selected anesthetic, carefully administered. This conclusion has been drawn after the review of some fourteen thousand anesthesias.

In the various types of bad anesthetic risks, their management depends on the selection of the proper anesthetic agent, and the choice of the different methods of administration suitable to the case, as well as on preliminary and postoperative treatment.

CARDIAC RISKS

Cardiac cases may or may not be bad risks. A simple heart murmur, without symptoms of decompensation, dyspnea, cough, edema or pain on exertion, with a normal electrocardiogram, should give no trouble under ordinary operative and anesthetic management.

Hypertension without symptoms, and which responds to treatment, should be disregarded. However, if hypertension is associated with substernal pain, or precardial distress, increased by exertion, nervous strain, or after a heavy meal, an electrocardiogram should be taken, and a guarded prognosis given in all operative procedures.

The blood pressure should be frequently checked during the operation, and the excitement stage prevented as much as possible by preliminary sedatives, and a quick induction. In prolonged operation a sudden drop in blood pressure calls for increase in oxygen percentage, and atropin to prevent pulmonary edema.

Cases with an electrocardiogram showing abnormal changes in the R. T. interval, associated with precardial distress, or substernal pain, with or without nausea, and these symptoms intensified by effort, require extreme caution in anesthetic management. These are the signs and symptoms of coronary sclerosis and an attack of coronary occlusion, and sudden death may occur at any time. Not long ago the author was called to an adjoining operating room, where a colleague had such a patient who died suddenly, during a tonsillectomy, before the first tonsil was removed. The patient had previously complained of precordial distress and orthopnea.

Myocardial damaged cases with inverted, diphasic, or low amplitude T-waves, in either the first or second leads of the electrocardiogram, especially if associated with hypotension, and symptoms of decompensation, dyspnea on exertion, cough or edema require extreme caution. Preliminary treatment with rest, and digitalis, before the operation, if possible, is important. During the operation frequent blood pressure, pulse and respiration records should be taken, also supportive treatment given with caffein, atropin, glucose subcutaneously, or blood transfusions in hemorrhage cases. Here I wish to register against large quantities of glucose, or normal salt solution, intravenously in heart cases; one in so doing may embarrass an already overworked heart. It is better to give these solutions subcutaneously, for then they will be absorbed slowly as needed.

Auricular fibrillation patients should, of course, be well digitalized, if time permits, before attempting any operation. Patients with any form of heart-block, as shown by the electrocardiogram, require special treatment: as with thyroid extract, if associated with low basal metabolism rate; caffein in complete heart-block; and the nitrites or similar vasodilators, if associated with hypertension.

RESPIRATORY RISKS

Mechanical obstructions of the upper air passages by foreign bodies sometimes test one's ingenuity to the limit. In these cases, one should be prepared to give anesthesia under pressure, and sometimes it may be necessary to do a tracheotomy, below the site of the obstruction, if it is possible to do so. I recall a case many years ago where a child had swallowed a jack, which became lodged in the upper part of the esophagus. This was before the modern anesthetic machines were devised, and it was necessary to give ether by the drop method. The jack was located by means of the esophagoscope; but while the operator was attempting to remove it the instrument slipped off the jack at a critical moment and the trachea was completely closed. The child died from asphyxiation, even though a tracheotomy was done. At the present time gas under pressure, or by the endotracheal method, might have prevented this fatality.

In thoracoplasties, where collapse of the chest wall becomes necessary for the treatment of tuberculosis, lung cavities or abscesses, it is important

* Chairman's address, Anesthesiology Section of the California Medical Association, at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

that a complete cardiac examination be made, including an electrocardiogram. This is essential because of the damage to the myocardium, which often occurs in these cases, following prolonged infection.

If the myocardium is seriously damaged, as shown by the inverted, diphasic, or low amplitude of the T-waves in the first or second leads of the electrocardiogram, rest and digitalis often improve this condition. By careful management of these cases during the operation, using as high a percentage of oxygen as possible to produce sufficient relaxation, shock may usually be prevented. It is important in these cases to watch the pulse, respiration and blood pressure very carefully. The blood pressure is usually raised about 10 millimeters of mercury, at the induction of the anesthesia, and this reading is generally maintained until evidence of shock appears, when the blood pressure begins to drop. This is the time to advise the operator to terminate the resection of the ribs and suture the wound. If everything has gone well, from two to four large sections of ribs may safely be removed at each stage.

In thoracoplasties, position on the table is very important. The patient should be placed on the well side, with the legs acutely flexed at the hips and knees, and secured by means of a strap below the knees, and an adhesive strip two and one-half inches wide and long enough to extend over the upper hip, being firmly fastened on either side of the table to prevent rolling of the patient. A large sand bag (14 x 8 x 4 inches) is placed against the chest, extending from the thigh to the axilla, so as to hold the chest firmly in a position—comfortable for the patient and convenient for the operator. It is very important for the patient to be comfortable, so as to interfere as little as possible with respiration. Have the patient cough and expectorate as much as possible before the anesthetic is started; this will give better respiratory excursion and a smoother induction.

The upper stage of thoracoplasties—the resection of the first, second and third ribs, especially in left-sided operations—is the stage which usually gives the greatest degree of shock. This is due to the fact that there is quite a maladjustment of the mediastinum, curving of the trachea, and displacement of the heart due to adhesions. When these upper ribs are resected, there is a sudden readjustment of the mediastinum, at which time I have seen the patient immediately go into shock, with rapid, feeble pulse, sudden drop in blood pressure, and sometimes the appearance of pulmonary edema. This condition requires quick action, with increase of oxygen percentage, atropin sulphate or caffein—sodium benzoate per hypo, and rapid closure of the chest wall. In case of hemorrhage, which sometimes occurs at this stage, glucose subcutaneously and blood transfusions may be necessary.

RENAL RISKS

Nephritics do well under gas anesthesia. There should be no complications in any operation, on any part of the renal system, under gas anesthesia properly administered. Nephrectomies, removal of calculi, cystoscopies and prostatectomies in most cases occur in middle age or elderly persons, and they all respond well to nitrous oxid or ethelene. These cases are sometimes complicated with cardiac conditions and should be so treated.

THYROID RISKS

Thyroidectomies should have preliminary treatment with sedatives, barbiturates, iodin, digitalis, and rest according to the basal metabolism rate, and amount of cardiac damage. These cases respond well to nitrous oxid anesthesia or local, as the individual operator prefers.

The possibility of mechanical obstruction of the upper respiratory tract, due to sudden collapse of the trachea, during certain types of goiter operations, must not be overlooked. We had one such case in Pasadena, during an operation for thyroidectomy, in which respiration was only maintained by oxygen under pressure, until tracheotomy was done to relieve a compression on the trachea. Anesthesia was then easily maintained through the tracheotomy tube, and the operation completed without further interruption. The patient made an uneventful recovery. Had we anticipated this condition, the difficulty could have been avoided by endotracheal anesthesia or by preliminary tracheotomy.

GASTRO-INTESTINAL RISKS

Gastro-intestinal surgery, carcinoma, perforated ulcer, intestinal obstructions, and gall-bladder surgery in most cases, require a small amount of ether in the gas anesthetic mixture, in order to get sufficient relaxation. In obstruction cases, it is good technique to routinely do gastric lavage before anesthesia. Fecal vomiting, or any form of vomiting, is not only annoying both to the anesthetist and operator, but also dangerous to the patient.

INJURIES

Head injuries, concussions, skull fractures with hemorrhage, usually require very little anesthesia and the treatment is for the most part that for shock.

ANEMIAS

Primary and secondary anemias require light anesthesia and high percentage of oxygen, and are not injured by gas anesthetics. Local or spinal anesthesia in these cases lowers resistance and may induce shock.

DIABETIC RISKS

Diabetic patients should be carefully checked for acidosis before operated, and blood sugar determinations obtained for their proper management. These cases should in no wise have ether, which increases acidosis. Gas with sufficient oxygen is the anesthetic par excellence in these cases.

The most thrilling experience we have had, as an anesthetist, occurred a few days ago, when Dr. E. B. Dewey and the author were called to the Woman's Hospital to see a six-day-old baby. Ever since birth, it was necessary to administer

oxygen to the infant almost continuously on account of dyspnea and cyanosis. The baby's heart was good, and a flat x-ray plate was taken of the chest and abdomen. The radiologist at the Pasadena Hospital, Dr. John Chapman, made a diagnosis of diaphragmatic hernia. He confirmed his diagnosis with a barium meal with x-ray showing all of the small intestines and most of the large intestine in the right chest, completely collapsing the right lung, partially compressing the left lung and crowding the heart over to the left. The child's condition was so desperate that after consultation, it was decided, in order to save the baby's life, it would be necessary to operate immediately.

After obtaining the parents' consent, the baby was taken to the operating room and placed on the operating table. Having been laid on the left side, the position necessary for the operation, it collapsed and was resuscitated by means of carbogen under pressure. The heart action continued good, and an operation being the only chance the baby had, the operator was advised to proceed.

Through artificial respiration inflating the left lung by means of the McKesson machine, using 95 per cent oxygen and 5 per cent carbon dioxid intermittently, about five or six times per minute, the baby was kept alive, but without respiratory movements. The first incision was effected through the right pleura, and an attempt made to replace the intestines. Since this was impossible, an abdominal incision was made, and with difficulty the intestine was pulled down into the abdominal cavity. The hernia being thus reduced, the opening, 6 centimeters in length in the diaphragm, was closed with four mattress sutures. After the hernia was closed, it was possible to inflate both lungs and the baby's condition improved. The operation lasted over an hour, and the only anesthetic used was 95 per cent oxygen and 5 per cent carbon dioxid until the last five minutes, when the skin sutures were being placed. The baby was limp and perfectly relaxed, life being maintained by periodically inflating the chest with carbogen. While applying the skin sutures, anesthesia was obtained by giving 50 per cent carbogen and 50 per cent nitrous oxid. At the close of the operation, breathing was regular, the normal pink color was restored, and the baby returned to the nursery in good condition. Six days later an x-ray showed the chest naturally expanded, and the intestines normally placed in the abdominal cavity.

CONCLUSIONS

1. In order to render the best possible service to the patient and the greatest assistance to the operator, in bad anesthetic risks it is necessary that a complete medical and surgical diagnosis be made prior to the operation.

2. The anesthetist must not only be trained in the mechanics of anesthesia, but must also be prepared to advise the surgeon as to the patient's condition at all times, and to anticipate complications in time to meet them.

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DIAGNOSIS VERSUS TREATMENT*

WITH REFERENCE TO DERMATOLOGY

By Louis F. X. Wilhelm, M. D.
Los Angeles

IN all branches of medicine we are confronted with the importance of diagnosis as contrasted with method of treatment. It is true that the patient consults the doctor, as my former chief, Dr. Fordyce, often said, not to be handed a long Latin name which he cannot understand, but for relief of his complaint. In order that the physician may be able to give relief by intelligent treatment, he must not only be a good therapist, but a competent diagnostician. This is as true in the realm of skin diseases and syphilis as in any other field of medicine. We, who limit our endeavor to the diagnosis and treatment of skin diseases and syphilis, believe that a great many practitioners, without any attempt at diagnosis, divide skin lesions into two classes—those to which they apply calamin lotion, and those to which they apply zinc oxid ointment. And yet they claim to be physicians.

The difference between a regular physician and the cultist is in the scientific approach of the former, by reason of his knowledge of the fundamental sciences and his training in making a diagnosis. The physician who, without attempting to make a diagnosis other than skin-rash or eczema, prescribes calamin lotion or zinc oxid ointment, becomes a cultist in practice if not in name. He brings discredit upon himself, and adds to the ever-growing lack of confidence of the masses in the noble profession of the healing art. His action often serves to turn the patient from the regular physician to the cultist. Is it any wonder that the various cults thrive?

INCORRECT DIAGNOSIS

It is not uncommon in these days for the general practitioner to suspect allergy in every type of generalized itching dermatosis. So-called allergy is considered the basis of every itching-skin eruption. The morphology of the individual lesion, and the distribution of the various lesions and their possible relationship to some systemic disturbance, is entirely disregarded. It is quite the rule, then, to refer the patient who complains of itching to the allergist who, of course, is not in position to give a competent opinion. After his numerous scratch and intradermal tests prove to be negative or positive, he is at sea as to further procedure in reaching a proper diagnosis. Hopkins recently again has pointed out the importance of physical disturbance, rather than food or protein allergy in chronic urticaria. Clinical interpretation often is more valuable than laboratory methods, especially skin tests, in a great many generalized itching dermatoses.

Moses Scholtz recently called attention to a patient who was studied for weeks, with all kinds of scratch tests and intradermal tests, when a

*Chairman's address, Dermatology and Syphilology Section of the California Medical Association, at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

diligent search for the burrow in the usual sites disclosed a typical scabies. Only a few days of antiscabetic treatment were necessary to give this patient complete relief, proving that skin tests were unnecessary.

Every dermatologist is familiar with the patient who is referred on account of a generalized eruption which has been treated vigorously for ringworm of the body by tincture of iodin, mercurochrome, mycosal, kerolysin, and a million and one other proprietaries, but which was in reality a typical pityriasis rosea. Also, there is the patient with early mycosis fungoides or leukemia cutis, treated for scabies, and the patient with parapsoriasis and pityriasis rubra pilaris who was referred to the dermatologist after he had submitted to the countless scratch and intradermal tests of our modern allergist.

More serious still is unrecognized syphilis. Recently I saw a man with typical syphilitic papules scattered generally over the body, and involving the face, palms and soles, who had been allowed to marry because two Wassermann tests on the blood were negative. Certainly, we all know that secondary syphilis gives 100 per cent positive Wassermann reactions on the blood. Suspecting that alcohol might account for the negative test, it was found, on questioning, that for years the patient never consumed less than a quart of bourbon whiskey per day. After three days of total abstinence, the Wassermann reaction proved the strongest total inhibition of hemolysis that the laboratory had recorded in ten years. The wife, incidentally, also presented a typical rosealar secondary lues.

A physician's nurse or secretary often is quite difficult to handle. Some years ago I saw a nurse with a very suspicious appearing ulcer on the breast and a typical satellite lymph node of Fournier, and advised a Wassermann test of the blood. Three or four weeks later she returned for further advice. In the meantime, she had consulted a surgeon who made a clinical diagnosis of Paget's disease and referred her to an exclusive x-ray clinic for treatment. When two deep x-ray treatments had failed to influence the lesion, she again requested my opinion before proceeding to surgery. After an extreme amount of persuasion, the patient finally submitted to a blood examination which disclosed a total inhibition of hemolysis. Adequate treatment for syphilis restored a normal breast and averted an unnecessary mutilating operation. A number of years ago I saw a patient who presented an ulcer of the right tonsil with the typical satellite lymph node of Fournier. He had been told that the lesion was a sarcoma. Repeated smears examined by the darkfield method disclosed typical *Spirochaeta pallida*. Examination of the blood gave a strongly positive Wassermann reaction. Adequate treatment for syphilis was followed by complete recovery.

Numbers of examples of undiagnosed late syphilis could be cited. For instance, a patient presented himself for relief of attacks of periodic vomiting, after having submitted to five exploratory laparotomies without improvement. The appendix and gall-bladder had been removed, and practically every abdominal organ had been studied macroscopically. Although blood Wassermann and spinal fluid examinations were entirely normal, a neurological examination disclosed typical findings of tabes dorsalis with gastric crisis. Thus, the five previous operations were proved to have been absolutely unnecessary.

I shall never forget the patient who was brought two thousand miles on a stretcher for medical aid, contrary to the advice of her family physician. She was found to have an infiltrating mediastinitis and pleuritis. Over a period of years, gradually she had become bedridden. Both her blood Wassermann and spinal fluid Wassermann reactions were strongly positive. Four months of active treatment for syphilis restored her powers of locomotion and caused an involution of all objective chest findings. This allowed her to return home and to walk unaided into her family physician's office, instead of being carried in as on her previous visit four months earlier. According to her own story, she asked him, "Why did you not test my blood and save me this 2000-mile journey?" A fair question, one must admit.

IMPORTANCE OF CORRECT DIAGNOSIS

These few case references serve to emphasize the importance of correct diagnosis before treatment is instituted. They could be multiplied easily. Failure to give the patient intelligent advice and proper treatment was due to improper diagnosis. The physician who makes a correct diagnosis can give a reasonably accurate prognosis. He will not subject the patient to irrelevant skin tests, to unnecessary treatment with various glandular substances, to contraindicated x-ray therapy, or to uncalled for surgery. At times one is inclined to think that patients so mismanaged might have done as well in the hands of cultists!

It is important in these days of various cults and isms that we, as a profession, examine our own practices. Possibly some of the material success of the irregulars is due to the failure of graduates from the recognized schools of medicine to admit their limitations. If a physician is unable to make a positive diagnosis, the patient invariably will welcome the suggestion of having consultation. Unfortunately there are still a great number of our profession who prefer to treat the patient without knowing what they are treating. In this way, they do exactly as the cultist who is always ready to try his adjustments or colonic washings or inane diet. To practice scientific medicine, we must know what the condition is before we suggest or begin therapy.

Pusey emphasizes the importance of diagnosis in a recent editorial in the *Archives of Dermatology and Syphilology* on "Treatment by Method Rather Than Diagnosis." He says:

"There is no satisfactory way of treating cutaneous or other diseases without knowing what one is treating. It is not sufficient to be expert in radiology, serum therapy, balneotherapy, electrotherapy, heliotherapy or surgical technique, or in any other method of treatment. None of them is a panacea. One needs to know what one is treating. In diseases of the skin it is not even suffi-

cient to take a piece of tissue and submit it to a pathologist; in most cutaneous diseases the clinical diagnosis is needed also, and the clinical diagnosis is always important. That is where the radiotherapeutists fall down in the therapy of diseases of the skin; they do not know and cannot find out what they are treating, and they proceed blindly. Even if we agreed to the proposition that the radiotherapeutists should treat the malignant growths of the skin, and the dermatologists should treat the non-malignant ones, the radiotherapeutists would still need the dermatologist to tell them which was which. One cannot diagnose one kind of diseases of skin—malignant ones, for example—unless one knows the other kinds."

While Pusey emphasizes the fallacy of radiotherapy without correct diagnosis, what he says is equally true of all other methods of therapy when the physician does not know what he is treating.

1401 South Hope Street.

RUPTURED ECTOPIC PREGNANCY*

By Leon J. Tiber, M. D.
Los Angeles

Discussion *by Edward N. Ewer, M. D., Oakland; James C. Doyle, M. D., Los Angeles; R. Glenn Craig, M. D., San Francisco.*

THE material on which this paper is based consists of 248 cases of ruptured ectopic pregnancies treated in the Obstetrical Service of the Los Angeles County General Hospital from June, 1927, to December, 1932. These patients were operated on by the attending men of that service, and so the technique of the operations varies to a certain degree. However, definite rules and regulations laid down by the chiefs of that staff were observed in all cases.

As is well known, there has been nothing new found either in the symptomatology or the treatment of ectopic gestation in recent years except autohemofusion, which was used in 123 cases in this series. However, it may be of value to enumerate the symptoms and signs as found in this series of cases.

On reviewing the 248 cases, it was found that there was no uniformity of symptoms or signs, and Kelly's [2] dictum that the most typical thing about ectopic gestation is that it is atypical, is certainly borne out.

Whenever a woman in the childbearing period suffering from acute abdominal pain with uterine hemorrhage is examined, one must consider the possibility of an ectopic pregnancy. In this series some of the cases were mistakenly diagnosed as acute appendicitis, uterine fibroid, dysmenorrhea, abortion, pyosalpinx, ovarian cyst, menorrhagia, and acute upper abdominal conditions.

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

Table 1.—*Age*

Years	Percentage of Cases
.... – 20	3.4
20 – 25	22.3
25 – 30	27.3
30 – 40	41.2
40 – +	2.9
Not given	2.3

Table 2.—*Para and Gravida*

Para	Percentage of Cases	Gravida	Percentage of Cases
0	23.9	1	17.2
1	25.5	2	17.8
2	18.3	3	17.8
3	11.7	4	12.2
4	6.1	5	12.2
5 – +	7.2	6	6.8
Not given	6.7	7 – +	8.9
			6.7

Table 3.—*Abortions and Miscarriages*

Abortions	Percentage of Cases	Miscarriages	Percentage of Cases
1	8.2	1	8.9
2	6.2	2	6.8
3	0.06	3	0.05
4 – +	0.06	4 – +	0.02

While there was no unanimity of symptoms and signs, still the following were found in most of the cases: some irregularity of menstruation, pains in the pelvis (with or without attacks of fainting), spotting or uterine hemorrhage of varying degrees, enlargement of the uterus (with or without a tender mass to any side of it), pain on moving of the cervix, pain on defecation, pain referred to the subscapular region, and distention of the pouch of Douglas, with signs of internal hemorrhage and shock. In this series the most frequent differentials to make were abortions, incomplete or complete, tubo-ovarian disease, salpingitis, ovarian cysts, and uterine fibroids.

Table 4.—*Types of Menstrual Disorders*

	Number of Cases	Percentage
No missed periods	85	34.2
Missed period	118	47.6
Missed two periods	40	16.1
Missed three periods	5	2.0

Table 5.—*Pain in Ectopic Pregnancies*

	Number of Cases	Percentage
Sudden sharp pain with fainting	75	30.2
Sudden sharp pain without fainting	120	48.4
Sudden sharp pain after colicky pain	61	24.6
Colicky pain only	50	20.2
Shoulder pain	77	31.0
Shoulder pain not mentioned	177	71.4
No pain	4	1.6

Table 6.—*Abnormalities*

	Number of Cases	Percentage
Nausea	129	52.0
Vomiting	84	33.8
Abnormal periods	210	84.6
Spotting	72	29.0
Intermittent bleeding	92	37.0
Profuse bleeding	33	13.3

In sixty-nine cases where there was mistaken diagnosis, and in those patients where operation proved the disease to be salpingitis, the histories showed a preponderance of the following symptoms: high temperature with leukocytosis above 18,000, hazy history of infection and leukorrhea, a definite mass on one side of the uterus, with a

Table 7.—*Admission Temperature*

Temperature	Number of Cases	Percentage
97 or under 97	18	7.3
97.2 – 98.6	76	30.6
98.8 – 100	93	37.1
100.2 – 101	28	11.3
101.2 – 102	4	1.6
102 or over 102	3	1.2
Not given	26	10.1

suggestion of mass on the other side. It is surprising how few smear reports were found, especially when a positive smear might have been the deciding factor in the diagnosis.

Those cases proven ovarian cysts at operation gave a history of pain with faintness, irregular bleeding, and a fluctuating mass to one side of

Table 8.—*Admission Pulse*

Pulse	Number of Cases	Percentage
Unable to get	3	1.2
50 – 70	6	2.4
70 – 80	15	6.0
80 – 90	45	18.1
90 – 100	30	12.0
100 – 110	45	18.1
110 – 115	17	6.9
115 and over 115	40	16.1
Not given	47	17.9

the uterus. In those cases where the diagnosis of uterine fibroids was proven, there was a history of irregular menses, marked pain, and enlarged irregular uterus. Numerous times the patients denied the possibility of pregnancy, or else were not able to give a definite date of the last normal menses. From a review of these mistaken as well as correctly diagnosed cases, one must conclude that a careful history is still the best means of arriving at a correct diagnosis.

Various methods[7] have been suggested to establish the diagnosis. Vaginal puncture and aspiration of blood establishes the diagnosis after intraperitoneal rupture. Some advise routine diagnostic curettage, but it does not seem advisable, as it may destroy an existing intra-uterine pregnancy, and the microscopic findings are not always conclusive. Repeated blood studies have been advised, but the method seems to be far too procrastinating. The Aschheim-Zondek test is a new method of great value in the diagnosis of early pregnancy, and was used in some of the more recent cases of this series.

Had the puncture of the posterior cul-de-sac with a needle, to verify the presence or absence of free blood in the pelvic cavity, been practiced more often, many of the mistaken diagnoses could have been corrected. If done with the proper technique there is little or no danger of infection; and the puncture can be done without an anesthetic.

In 1914 F. Thies[3] of Leipsic first utilized the free intra-abdominal blood for infusion purposes in cases of ruptured ectopic gestation, and since then the method has found much favor in Europe. Appleby[4] of Canada reported nine cases of autohemofusion in ruptured ectopic gestation. Maynard and Reiss[5] of Vermont report one case. The latest American reference is by Ricci and Di Palma.[6] They report twelve cases of autohemofusion in ectopic pregnancy, and also review the literature and technique of procedure in their paper. They advise the use of the name "autohemofusion" in preference to autotransfusion.

The question of autohemofusion in ruptured ectopic gestation is of importance. It is not always easy to find a donor among the patient's relatives, where the patients are not financially able to get a donor of a known grouping. When a donor from among the relatives is found, much time is necessary for the proper blood studies, and time is a very important factor in a case of active bleeding. In autohemofusion a great deal of valuable time is saved. It allows the doctor to operate as soon as a diagnosis is made. It is a fairly simple procedure, especially as it is practiced at the Los Angeles County General Hospital. The patient is prepared in the usual manner. She is kept in a horizontal position, so that the free blood may gravitate to the pelvic cavity and thus facilitate its removal. When the peritoneum is exposed, a small incision is made, suction apparatus is inserted into the peritoneal cavity, and the blood sucked up into a receptacle. The blood is then

Table 9.—*Comparisons of Mortality Rates*

	Number of Cases	Deaths	Percentage
Autohemofusion only	123	1	.81
Direct transfusion and autohemofusion	66	2	3.03
Direct transfusion only	39	2	5.09
No transfusion	86	2	2.3
Total number of cases	248	7	2.8

TABLE 10.—*Blood Picture*

LEUKOCYTIC COUNT	Highest count: 48,000				Lowest count: 4,250		
Count in thousands	.. – 6	6 – 8	8 – 10	10 – 16	16 – 24	24 – +	Not given
Number of cases	2	24	27	71	66	24	34
Percentage	.7	9.7	10.9	28.6	26.6	9.7	13.7
RED CELL COUNT	Highest count: 6,020,000				Lowest count: 1,100,000		
Count in millions	1 -	2	3	4	5 – +		Not given
Number of cases	11	53	107	31	7		37
Percentage	4.4	21.4	43.0	12.5	2.7		14.9

BLOOD PRESSURE							
Systolic	40 – 50	50 – 75	75 – 100	100 –125	125 – 150	150 – 175+	Not given
Number of cases	2	20	46	84	52	5	39
Percentage	.7	8.1	18.5	33.8	21.0	2.0	15.7
Diastolic	10 – 20	20 – 40	40 – 50	50 – 75	75 – 85	85 – 125+	Not given
Number of cases	2	15	22	95	56	19	39
Percentage	.7	6.0	8.9	38.3	22.6	7.7	15.7

filtered through ten layers of citrate saturated gauze into a graduated container, the necessary amount of 2.5 per cent of sodium citrate solution is added and this mixture is immediately reinjected into the patient's vein with a 50 cubic centimeter syringe. The usual precautions of an ordinary transfusion are observed, and no unusual complications are encountered.

TABLE 11.—*Time of Operation After Admission*

	Number of Cases	Deaths	Per-centage
Operated same day	145	..	.....
Second day	35	..	.....
Third day	12	2	16.7
Fourth day	22	..	.....
Fifth day	4	..	.....
Sixth day	6	2	33.3
Seventh day	6	..	.....
Eighth day	2	..	.....
Ninth day	3	..	.....
Tenth day	3	1	33.3
Twelfth day	3	..	.....
Thirteenth day	3	..	.....
Fourteenth day	3	2	66.6
Fifteenth day	1	..	.....

In this series most of the cases were operated on the same day that the patient was admitted to the hospital, as soon as the diagnosis was made. The only reason for any delay in operation was the uncertainty of the diagnosis. The chiefs of this service hold that as soon as a diagnosis of ectopic pregnancy is made, be it ruptured or unruptured, operation is indicated, and the result in this series of cases justifies that procedure. Thus we find that in the cases that were operated on the same day after admission, there were no deaths, and the deaths that occurred were in cases where they were operated on the third, sixth, tenth, or fourteenth day. As the cause of death in three cases was blood dyscrasia, it is of interest to note that in all these cases the operation was later than the third day. Is it reasonable to assume, then, that some change has taken place in the free blood in the peritoneal cavity that caused the dyscrasia after that same blood was reinjected into the patient's circulation? In the cases operated on the same day in which autohemofusion was done, no deaths were claimed to be due to blood dyscrasia. In the recent paper by Ricci and Di Palma [6] it was shown that the red cell count of the intra-abdominal free blood was microscopically normal as late as seventy-two hours after the time of the rupture.

There were seven deaths in this series: one in the cases of autohemofusion, two in the cases of autohemofusion and direct transfusion combined, two in the no-transfusion cases, and one in the direct transfusion only. Thus we see that in this series the lowest mortality is in the autohemofusion cases. However, in reviewing the causes of death in these cases, it is seen that in the autohemofusion death the cause was blood dyscrasia.

TABLE 12.—*Cause of Death*

Cause of Death	Auto-hemofusion	Direct Transfusion
1. Exsanguination and shock because of blood dyscrasia following operation for ectopic pregnancy	+	—
2. Exsanguination and shock because of blood dyscrasia following operation for ectopic pregnancy	+	+
3. Ruptured ectopic and hemorrhage into peritoneal cavity	—	+
4. Ruptured ectopic and diabetes mellitus	—	—
5. Ruptured ectopic and pulmonary embolus with terminal pneumonia	—	+
6. Ruptured ectopic and paralytic ileus with intestinal obstruction	+	+
7. Possible embolus to lung or brain	—	—

In the two cases where autohemofusion and direct transfusion were used, one died of paralytic ileus and intestinal obstruction, the other of exsanguination and shock caused by blood dyscrasia. In the cases where direct transfusion only was used, the cause of death was hemorrhage into the peritoneal cavity, possibly due to an error in technique; the other death being due to pulmonary embolus and terminal pneumonia. Surprising as it may seem, in the cases where no transfusion was done, one death was due to embolus, and the other was ascribed to ruptured ectopic pregnancy and diabetes mellitus.

Thus we see that the mortality rate in 123 cases where autohemofusion was used was .81 per cent; in sixty-six cases where direct and autohemofusion combined were used, the mortality rate was 3.03 per cent; in thirty-nine cases where direct transfusion only was used, the mortality rate was 5.09 per cent; and in the eighty-six cases where no transfusion was used, the mortality was 2.3 per cent. The combined mortality rate in this series was 2.8 per cent, a figure which compares very favorably with the mortality rates noted by other observers. Considering that many of the patients who are sent to the County Hospital are badly neglected ones, the staff is to be congratulated on the results obtained.

CONCLUSIONS

1. A study of 248 cases of ectopic gestation showed a mortality rate of 2.8 per cent.
2. In the 123 cases of ruptured ectopic gestation that have been autohemofused the mortality rate was .81 per cent.
3. Autohemofusion is a simple procedure, and with ordinary precautions is devoid of risk.
4. No elaborate equipment is necessary for autohemofusion, hence it may be used in the smallest hospitals.
5. Autohemofusion is a life-saving measure, especially for patients in imminent danger, and should be used in all cases with free intra-abdominal blood.
6. The morbidity and mortality is the lowest in the cases operated on immediately after diagnosis was made.
7. In case of doubt as to diagnosis, puncture of the posterior cul-de-sac is indicated.

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DISCUSSION

Edward N. Ewer, M. D. (251 Moss Avenue, Oakland).—The success attending the procedure of intravascularization of the free peritoneal blood, in Doctor Tiber's series of 123 cases, is impressive. Considering the showing made for it, we must admit a broad field for autotransfusion; for neither donors, nor the fees to be paid to them, are always quickly available.

At present, if donors *are* easily to be had, I feel safer in transfusing and operating when the blood pressure and pulse have reacted. They usually do react in a short time, often within an hour.

An Alameda County Hospital patient was operated upon, pulseless, in profound shock and she succumbed. Four hundred and fifty cubic centimeters of citrated blood had been given during the operation. It seems unlikely that the substitution of the intraperitoneal blood would have secured a different result, but waiting for a reaction after the donor transfusion might have done so.

The slow intravenous injection of gum glucose solution, so much used at the New York Women's Hospital to combat shock, is highly efficient, and might profitably precede operation and autotransfusion. It is available in 300 cubic centimeter ampoules, ready for use.

Doctor Tiber notes that, as usual, there were many cases incorrectly diagnosed. Several of these were pyosalpinx and tubo-ovarian inflammations. In all hospital statistics it is found that many patients with ectopic pregnancies have histories suggestive of pelvic inflammatory disease, so the frequency of that admission diagnosis is not surprising. The author suggests that attention to the temperature curve, the leukocyte count, the palpation of masses, and especially the examination of smears, might determine the diagnosis. All these are valuable, and must be given full consideration; but the great importance of the blood sedimentation test is not mentioned.

In the Alameda County Hospital, sedimentation tests are made in the admission department on all cases in which abdominal infections are suspected. Even if tubal pregnancies were handled on the obstetric, instead of, as at present, on the gynecologic ward, they would still have the benefit of that test in the differential diagnosis. Of the last twenty-four cases in that hospital operated upon for tubal pregnancy, eleven had sedimentation rates over one hour, three between forty and fifty minutes, six between thirty and forty minutes, and two between twenty-five and thirty minutes. One, with a coincident salpingitis, and another with infection following a previous office curettage, had twelve- and thirteen-minute rates. No uncomplicated case had a rate under twenty-five minutes.

The rate is twelve to fifteen minutes, using the Linzenmier tube method in fully 95 per cent of the cases of pelvic inflammatory disease, with symptoms comparable in severity with those attending a ruptured pregnant tube. This test, consuming but a few minutes of time, will at once partition off the inflammation cases, thereby greatly aiding diagnosis.

Aspiration of the cul-de-sac is an extremely useful diagnostic aid. I have used it many times without accident, and consider it safe in careful hands.

When pregnancy is certain, and the question lies between intra- and extra-uterine, and palpatory findings are suspicious, and the uterine bleeding is sufficient to indicate disruption of the ovum if in the uterus, then curettage seems indicated. If no ovum is dislodged by the curette, laparotomy may be done at once.

Doctor Tiber has done us a distinct service in reporting a large enough series of autotransfusions to inspire confidence in the method. One should bear in mind his advice, that it is most useful and devoid of danger in the early hours after rupture, before changes have taken place in the blood to be injected.

James C. Doyle, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Tiber, with his data relative to age, symptoms, and findings, has presented an interesting paper on ectopic gestation. The early surgical intervention in so many cases is commendable.

That eighty-five, or 34.2 per cent, of the two hundred and forty-eight cases had not missed a period is significant. However, in this group are probably those who "went over five or six days," and it is felt that this "lateness" is as important as a missed period in the presence of other symptoms characteristic of ectopic pregnancy. It is well known that it is at times extremely difficult, even after rupture, to make a correct diagnosis. Salpingitis is more frequently confused with ectopic pregnancy than any other condition.

The "sedimentation test" will, I believe, in many cases prevent this mistake. The sedimentation time in acute salpingitis is from ten to fifteen minutes, while in ruptured ectopic gestation for the first twenty-four hours following rupture, the time will be close to normal, sixty minutes or more. Each day, however, makes the sedimentation time more rapid, due to protein absorption and peritoneal irritation of free blood.

The utilization of the free blood, by means of autohemofusion, should be more generally employed. The technique is quite simple, and the results, as Doctor Tiber has shown, are most gratifying.

The hormone test (Aschheim-Zondek or Friedman) is a valuable aid to diagnosis of pregnancy; but should there be a ruptured ectopic pregnancy, a wait of forty-eight hours for completion of the test would be hazardous.

Needling of the cul-de-sac as a diagnostic aid should be done, I believe, only as a last resort.

❦

R. Glenn Craig, M. D. (490 Post Street, San Francisco).—Doctor Tiber has very ably presented to us the results obtained in ectopic pregnancies, emphasizing the importance of autohemofusion as an adjunct to treatment. Without question, this is a valuable addition to our armamentarium, and often a life-saving measure, especially with patients who have had a tubal rupture with a large amount of fresh blood free in the peritoneal cavity. However, I am inclined to disagree with his conclusion that it is devoid of risk.

One death, with an autohemofusion, was due to a "blood dyscrasia" which might not have occurred had the autohemofusion been omitted. Another patient died from a "blood dyscrasia," who had an autohemofusion and a direct transfusion. Assuming that the blood-matching was properly done for the direct transfusion, this death must be attributed to the autohemofusion. The deaths due to intestinal obstruction, embolus, diabetes, pneumonia and secondary hemorrhage, have no bearing on the subject.

The mortality rate (0.81 per cent) among the 123 patients who had an autohemofusion compares most favorably with the mortality rate (2.8 per cent) of the general group. When an autohemofusion is done, the hemorrhage into the peritoneal cavity must be recent—less than three days old—and the fact that these patients were more promptly operated upon may be a factor in the lower mortality rate.

Autohemofusion would seem to be of greatest value in an ectopic pregnancy with tubal "rupture." In these patients the growth of the fetus, with the erosion of the tubal wall by the trophoblastic cells, causes an actual rupture of the tube with the sudden loss of large amounts of blood. While this usually produces the "classical" textbook picture of an ectopic pregnancy, it is not as common as the termination of the pregnancy by a tubal abortion, or the extrusion of all or parts of the fetus and placenta through the fimbria of the tube. The latter causes the loss of varying amounts of blood, depending upon the amount of separation which takes place at one time, and may be recurrent whenever a new portion of the placenta separates. Pain, in any portion of the peritoneal cavity, is due to the local irritation to the parietal peritoneum caused by the free blood. Careful attention to the details of the history will enable one to reconstruct clearly the various steps in the underlying pathology.

It is interesting to note that no change has occurred in the fundamental treatment since the rules drawn by Lawson Tait from his first three patients in 1883. He recognized, first, the necessity for an immediate operation, and secondly, the necessity for a quick operation. These two points may be illustrated by quoting his case reports.

In 1881 Doctor Tait was called into consultation by Doctor Hallwright when the patient was found in collapse and the uterus fixed by a doughy mass. The diagnosis of a ruptured ectopic pregnancy was made, and surgery was suggested and even urged by Doctor Hallwright. Tait lacked the courage to operate. A second hemorrhage killed the patient. A postmortem examination was held and the specimen injected. Tait found that the hemorrhage could easily have been controlled by a ligature.

In 1883 Doctor Tait was called to see a young woman of twenty-nine who was in collapse. Her history was that of an ectopic pregnancy with hemorrhage from rupture. She had missed but one period. Bed rest was advised and the patient improved. However, on the fifth day the patient got up and had another attack. Doctor Tait was called and operated immediately, removing clots, serum and débris. He found a ruptured left tubal pregnancy. He tied the left broad ligament, removed the pregnancy, washed out the abdomen, and put in a drainage tube. Nine days later the patient was convalescent.

A few months after the above patient he was called to see another patient "dying from hemorrhage." Immediately he opened the abdomen and found a fetus of twelve weeks, surrounded by clots, with the placenta adherent to the intestines. In an effort to be gentle he separated the adhesions too slowly, and was unable to ligate the vessels before the patient died. He, therefore, decided henceforth to operate quickly. Among his next thirty-nine patients he had only one death—a mortality rate of 2.56 per cent.

These principles laid down by Tait are just as true today as in 1883, but autohemofusion is probably the most important fundamental contribution of recent years.

PHYSIOLOGY OF THE SENSE ORGANS—SOME RECENT ADVANCES*

By J. M. D. Olmsted, Ph.D.
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Discussion *by Chauncey D. Leake, Ph. D., San Francisco; William J. Kerr, M. D., San Francisco; Herman Adler, M. D., Berkeley.*

GIVEN the situation of the schoolboy, the bent pin, the teacher, and the teacher's chair, we will take it for granted that the introduction of the point of the bent pin into the epidermis of the pedagogue causes in the latter a sensation of pain. Philosopher, psychologist, physiologist, physicist, and physicial-chemist, all recognize that there is an unsatisfactory gap between the two events, (1) entrance of the pin into the pedagogue's epidermis and (2) his sensation of pain. To quote from Adrian, "If we belong to the extreme left wing of the behaviorist school, we may deny that the arrival of a sensory message produces anything except a further series of physical and chemical changes in the central nervous system, a complex of excitation and inhibition processes, and passages of impulses to and fro, ending in a

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motor discharge or in the laying down of some kind of pattern in the cortex. If we are on the right wing of the idealists, we may hold that nerve fibers and nervous impulses are ideas, and are therefore made of the same stuff as the sensations they produce. But if we have dabbled in metaphysics, and never succeeded in adopting any firm beliefs, we must admit that our sensations are facts to be reckoned with, and that they are facts of such a kind that it is very odd that they should be 'caused' by physical and chemical changes in the brain. To many of those whose concern is with the body or with the material world, it may not seem odd at all."

HOW SENSATIONS ARE AROUSED

We will first examine into the way in which our sensations are aroused. The receptor, the sense organ, is a structure so designed as to respond to a certain kind of stimulus, and a stimulus is defined as a change in the environment.

As an illustration, let us trace the train of events which must take place before we can say "I see a certain object." The stimulus, that is, the change in the environment of the retinal cones which are going to be acted upon, must be, first of all, what we may describe as radiant energy; it must have a wave length lying between four and eight ten-thousandths of a millimeter; and it must be above a certain minimum intensity. Then and then only will it initiate some change in the retinal sense organ. Once the change in the environment brings about the change in the sense organ, this second change now initiates a nerve impulse in the nerve fiber which is in contact with the sense organ. Older measurements indicated that the nerve impulse in man traveled toward the brain at the rate of one hundred and twenty meters per second, but very recent experiments show that the rate may be as slow as forty meters per second for motor nerves, and four to twenty for sensory nerves. We would like to be able to say that this nerve impulse passes over a definite pathway like a telephone line to a definite region in the central nervous system, but it is much safer to say that all the evidence indicates that the disturbance must pass first to the thalamus and, in this particular case under discussion, to the cerebral cortex before the individual can really be said to have "seen" the object. The central end of the line is at present being investigated in the laboratory of Doctor Erlanger of St. Louis, and in January, 1933, there appeared two papers by his associates on the cortical response to optic nerve stimulation, using the cathode ray osillograph to demonstrate the response. Under the proper anesthetic, a rabbit's eye was removed, and the optic nerve prepared for artificial stimulation by electrical means. That particular part of the cerebral cortex to which the neurologist has traced the nervous pathways having their origin in the eye, was supplied with leads to the cathode ray oscillograph. When the optic nerve was stimulated, characteristic electrical changes were registered from this cortical area. Clearly, then, we have physiological proof that impulses set up in the eye do finally reach the brain and set up electrical disturbances there. The belief that conscious perception must be correlated with physicochemical changes in the brain tissue is greatly strengthened by these recent experiments.

SPECIFIC NATURE OF ONSET

Now the strange thing about this chain of events is that they *begin* in a specific manner, a specific change in the environment, acting on a specific sense organ; but when the disturbance has once reached a nerve, all specificity appears to be lost. So far as physiologists have been able to discover, even with the help of the physicist, the chemist—and the electrical engineer, for that matter—all nerve impulses are essentially alike. They naturally differ in magnitude according to whether they are registered from a large or a small nerve; they may differ in their rate of transmission, also, according to the size of the nerve; but whether the impulses are registered from a motor nerve giving rise to motion, or a sensory nerve giving rise to sensation, they all appear to have the same physiological characteristics. It is strange to think that the nerve impulses started toward the brain by the odor of a skunk are probably no different from those set off by the odor of a rose; that impulses which give rise to sensations of pleasure may be in no wise different from those which give rise to pain. It would seem that nerves bear no more specific relation to sensation than the telephone wire does to its message. It must be remembered, however, that practically all our knowledge of the nerve impulse is based on the swing of a pointer on the dial of a sensitive galvanometer or on the analysis of the chemical changes taking place during stimulation.

PAIN AND OTHER SENSATIONS

Physiologists earlier in this century thought that pain should be placed in a different category from other sensations. If you map out the distribution of the sense organs in the skin, the touch spots, hot spots, cold spots, etc., and act on any one of them with the appropriate stimulus, the characteristic sensation of touch, heat, cold, etc., will be aroused. But if the stimulus is intense, a sensation of pain will be aroused. Von Frey said that the pain endings are so numerous and so close together—some one hundred to two hundred per square centimeter of about four million over the surface of the body—that the intense stimulus intended for another kind of organ would affect the contiguous pain organs. Physiologists in general have accepted this view. Goldscheider, on the contrary, has very recently revived the older idea and believes that painful sensation may be aroused by intense stimulation of receptors for mechanical changes, such as pressure by a blunt object which deforms the skin.

There is some evidence that Goldscheider's view may be correct for pressure pain; but at any rate it seems evident that the nerve fibers concerned with such dual reactions are not the only ones concerned with pain, and probably not even the usual ones.

NERVE IMPULSES IN RELATION TO SIZE OF NERVE FIBERS

It is now a well-known fact that nerve impulses are conducted at a more rapid rate in large nerve fibers than in small ones. Certain investigators, Ransom among others, have produced evidence that fine nonmedullated nerves, with slow conduction rates, are concerned with pain. Adrian suggests that sense organs may be arranged in a series: at one end of the scale are tactile sense organs which are very sensitive and whose nerve fibers are large and conduct rapidly; at the other end of the scale are pain organs, responding only to intense stimuli, whose nerve fibers are small and conduct slowly; in between these extremes we may have sense organs, for example, for pressure, which partake of both characters, depending on the strength of the stimulus.

Some work I did in Brussels two years ago bears out this idea. I was measuring the chronaxie of certain nerves. The chronaxie of a nerve is time necessary to excite a nerve with an electric current of twice the threshold strength. The absolute value of the chronaxie is at the moment a matter of debate, but if chronaximetric determinations are made in exactly the same way throughout an experiment, there is no doubt that the results are of value for purposes of comparing degrees of excitability. I was determining, first, the chronaxie of a typical motor nerve to a certain muscle in the leg of the decerebrate cat; second, the chronaxie of the sensory nerve necessary for setting up a typical reflex movement of this same leg muscle, the result presumably of a painful stimulus; third, the chronaxie of the sensory nerve from the lungs necessary to cause change in breathing, the customary quick gasp after a painful stimulus; and fourth, the chronaxie of the sympathetic nerve controlling the pupil of the eye and the nictitating membrane, that third eyelid which can be drawn over the cat's eye. I had for comparison, therefore, the excitability of the typical large motor nerve, typical pain nerves for producing the reflex withdrawal of the limb and for causing a gasp, and finally of small sympathetic nerve fibers. I found that the chronaxie for the motor nerve and its reflex were the same, and that the others were only slightly larger, that for the sympathetic nerve being the largest. Now since Lapicque has shown that the chronaxie varies inversely with the diameter of a nerve, had the pain fibers causing the pulling away of the leg been exclusively nerves of small diameter, then that chronaxie should have been much larger than it was. The conclusion I drew from these experiments was that, for these particular reactions, there is no evidence that pain fibers are exclusively small fibers.

SIZE OF NERVE IMPULSES

There is another character of the nerve impulse which should now be mentioned. If we stimulate a nerve directly, as we can easily do in physiological preparations, by artificial means, instead of through sense organs, we find that the magnitude of the nerve impulse in the individual fibers, as measured by the difference of potential developed in the nerve as the impulse passes by, is the same, no matter what the strength of stimulus used. Thus, whether we use a small electric shock to set off an impulse or a powerful one, if the nerve fiber responds, it responds to its fullest extent or not at all. In addition to being nonspecific, therefore, the nerve impulse of a given nerve appears to be practically invariable as to its size. Of course, if a nerve is compressed and cooled and the blood supply checked, or if it is subjected to the influence of alcohol or other narcotics, the magnitude of the nerve impulses suffers; but the only more or less *normal* way to alter the size of nerve impulses is to send them along the nerve so fast, something like a thousand a second, that each one treads on the heels of its predecessor. They do become smaller and somewhat irregular under these conditions. But the usual rate of discharge from normal stimulation of a sense organ is only one hundred per second, and this most nerves can follow with a considerable margin of safety.

If, therefore, the nerve impulses set up by the sense organs are nonspecific and practically invariable as to size, how can we account for the undeniable fact that our sensations are qualitatively different one from the other? The point seems to be that these nerve impulses land up in different parts of the central nervous system; it is the location of the central receiving station that is all-important. Johannes Müller, author of the first modern textbook of physiology, said: "If you could connect up the ear with the optic nerve, and the eye with the auditory nerve, you would see thunder and hear lightning." This precise experiment has as yet not been done. But we have switched other pairs of nerves in animals and made each one of the pair do exactly opposite to what it would have done naturally, simply by causing it to grow into a region other than its usual one.

NERVE CONDUCTION WHEN THE LINE IS TAPPED

But there is another recently discovered and most startling feature of nerve conduction, at least in one certain nerve. This startling discovery came from tapping the line, as it were, between the sense organ and the brain. The auditory nerve is short and thick, is surrounded by bone, and is difficult to insulate electrically. One would think that the difficulties in attempting to get electrical records from it were almost insurmountable, but two psychologists at Princeton, Wever and Bray, in 1930 gallantly made the attempt. Instead, however, of connecting the leads from this nerve to string galvanometer, capillary electrometer, cathode ray oscillograph, or other device for recording electrical disturbances, they connected them to an amplifier and a loudspeaker, with the surprising result that words spoken by a person into a cat's ear were actually reproduced from the loudspeaker. This was almost unbelievable, and

although there are some scientists still unconvinced, so many others have repeated and confirmed the Wever-Bray results, that I am inclined to believe the case proven. The most convincing confirmation has come from the physiological laboratory at Harvard. A stethoscope was attached to the ears of a decerebrate cat and sounds were made into the bell of the stethoscope. Leads from the auditory nerve were connected with a loudspeaker. Doctor Cannon has informed me that with good contacts, when a loudspeaker is connected to the cat's auditory nerve, one cannot only detect words, but also the timbre of the voice of the person who speaks into the stethoscope. By exploring the brain tissue with a needle electrode, only the very tip of which was non-insulated, it was found that the response became more intense as the auditory tract was approached. In fact, when the leads were connected to a string galvanometer with one stage of amplification, electrical responses from the brain were obtained *only* when the needle lay in or on the auditory tract; a shift of as little as one millimeter sufficing to raise the response through a maximum and to cause it to die away entirely. When the cat was more deeply anesthetized this effect disappeared. If novocain was injected on one side of the brain, responses on this side only ceased, the other side still gave the response; and finally, after two to three hours, when the narcotic had worn off, the responses returned. When the cat was dying, responses from the brain stem ceased as soon as the heart stopped beating, or even a few minutes before; responses from the auditory nerve persisting for some minutes after the heart had stopped. This is in harmony with the known survival of nervous tissue: central responses go first, responses in peripheral nerves persist to a slight degree after death. These results seem to me to be fairly adequate proof that the Wever-Bray effect is really a physiological one, not an artifact.

NERVE VIBRATIONS AND THE HUMAN VOICE

If all nerve impulses have essentially the same electrical character, and are all more or less of the same intensity and have an absolute maximum frequency of one thousand per second, how is it possible that they can give rise to vibrations which so accurately duplicate vibrations of such different rates and amplitudes as are to be found in the human voice? It must be remembered that the human ear is capable of perceiving about eleven thousand different pitches in all. Practically every text-book of physiology will tell one that the ear acts as a resonator. Nearly two centuries ago—to be exact, in 1761—the resonance theory of the action of the cochlea was proposed by Cotugno. It was again advanced by Sir Charles Bell in 1826; but because of his admirable work on this subject in 1863, this theory is always associated with the name of Helmholtz. According to the resonance theory, sounds of a given pitch cause vibrations in certain fibers only of the basilar membrane in the cochlea. These fibers are in contact with a limited number of sensory cells, which in turn are innervated by certain nerve fibers. Therefore only a relatively few nerve fibers in the tract from the ear to the brain are busy for a particular vibration rate. For another pitch, other fibers would vibrate, other sensory cells would respond, and another lot of nerve fibers would be set into action. The opposing theory, the telephone theory, postulates that the membrane vibrates as a whole, just as the diaphragm in the telephone receiver vibrates as a whole in response to sound waves. In this case the auditory nerve must also act as a whole, and analysis would not take place in the cochlea but in the brain. This theory has never been accepted for the very reasons given above, namely, the known characteristics of the nerve impulse, the objection being stated thus by Hartridge: "The telephone theory assumes that the auditory nerve can conduct complicated wave forms, intact as to pitch and amplitude, at rates up to forty thousand per second." Now this is just the sort of thing that Wever and Bray have found. Adrian remarks, "It is, I think, an open question whether there will be much left of the resonance hypothesis of the cochlea when Wever and Bray have finished their investigations."

How to reconcile facts (if you believe that the Wever-Bray effect is a true physiological response and not an artifact) and theories? The explanation offered is that not a few fibers only, corresponding to a few sensory cells in the cochlea, are set in action by a sound of a given pitch, but many. They are not all set off simultaneously, however, but in a series, so that the composite effect for the whole nerve, that is, the sum of all the individual differences of potential in all the different individual nerve fibers, is of such a nature that the response appears in the form of sinusoidal oscillations, and reproduction of the stimulating sound is, therefore, possible by appropriate recording of these nerve impulses.

SOUND IN RELATION TO PHYSICS, CHEMISTRY, AND PHYSIOLOGY

Physics and chemistry must always be one jump ahead of physiology, so that only just now have physiologists adopted the prevailing fashion and begun to play with amplifiers, heterodynes, loudspeakers, and all the other accompaniments of radio. We have seen how the amplifier and loudspeaker is upsetting a two-century-old theory concerning the action of the organ of hearing. Amplifiers attached to the galvanometers we have used for some time to register the effects of the nerve impulse have proved especially helpful, and it is through amplification with a four-valve amplifier that Adrian, whose work has brought him recognition in the form of the Nobel prize (which he recently received conjointly with Sir Charles Sherrington), has been able to record the electrical changes in a *single fiber* of a large nerve trunk. The delicacy of this procedure is evident when one realizes that the diameter of one of these fibers is about fifteen one-thousandths of a millimeter.

ELECTRICAL MANIFESTATION OF THE NERVE IMPULSE

Now the prevailing theory to account for the electrical manifestation of the nerve impulse is that the point on the nerve which receives the stimulus becomes momentarily depolarized. Our sole "proof" for such a theory is again drawn from analogy. F. R. Lillie has made a model of a nerve out of an iron wire. He places the iron wire in strong nitric acid, and a protective film, presumably an oxid, is formed, and the wire is no longer attacked by the acid—it has become passive. If, however, this protective film is broken at some point, a wave of surface disintegration passes along the wire, and the surface film is reformed in its wake. So many of the characteristics of the nerve impulse may be duplicated by this model, that physiologists feel justified in adopting this depolarization theory to account for the nerve impulse.

Now Adrian last year extended this analogy to the sense organs. He suggests that in sense organs the effect of the stimulus is also depolarization, which in turn depolarizes the nerve, and initiates the nerve impulse. Again, one must recognize that this is only a suggestion—we are guessing what the change in environment does to the sense organ to set it off.

ELECTRICAL CHANGES IN SENSORY NERVES

But let us return to the more tangible results Adrian obtained when he recorded the electrical changes in sensory nerves which pass from the sense organs toward the central nervous system. In the first place, he had to decide that his results were real results, not artifacts. The preparation he used was that most familiar to physiologists, the gastrocnemius muscle of the frog with its attendant sciatic nerve. He fixed the muscle so that it could be gently stretched without disturbing the nerve, and placed the electrodes leading to the galvanometer on the nerve. When the muscle was gently pulled, a series of electrical disturbances was registered by the galvanometer. When these disturbances were photographed they showed exactly the same characteristics that we have long been familiar with for nerve impulses going *to* muscles where we not only have the electrical record from the nerve, but the contraction of the muscle to assure us that these responses are genuine. Simply stretching the muscle, therefore, gave rise to nerve impulses going away from the muscle toward the central nervous system. Crushing the nerve, or injuring it so that it could no longer conduct an impulse, abolished the responses. The results were no artifact, but a truly physiological response to stretching the muscle. We have known for some time the particular sense organs which must serve this purpose in the muscle, the muscle spindles. These sense organs are responsible for conveying to the brain the amount of tension present in a muscle, and the evidence shows that they are located in the fleshy part of the muscle, not in the tendons, as many have thought; for although such responses in normal animals are called tendon-jerks because they may be elicited by striking a tendon, for example, the well-known knee-jerk obtained by striking the patellar tendon just below the knee cap, they may be obtained even after the tendon has been cut away.

Now, nearly every muscle has these muscle spindles, and Adrian's brilliant teacher, Keith Lucas (who was killed in an aeroplane accident in the war), investigated an exceedingly small muscle which goes from the skin of the back of a frog to the body wall. The nerve to this tiny muscle has fifteen to twenty fibers only, as contrasted with, say, the nerve to the calf muscle, which would have some five hundred fibers. When this muscle is stretched by hanging a two-gram weight on it, the muscle spindles are stimulated, and the electrical charges in the nerve indicate that impulses of a certain magnitude pass up the nerve at a slightly irregular rate of approximately one hundred per second. If a smaller weight is hung on the muscle, the *size* of the nerve impulses remains the same, but the frequency diminishes. To record the action of one sense organ, Adrian carefully trimmed away an edge of the muscle; the rhythm of responses in the nerve fell clearly into four perfectly regular series, recurring at intervals of .035, .042, .045, and .046 seconds, respectively. Another strip of muscle was removed and now only the responses at .035 were left. When still another strip was removed the responses ceased. The strip before the last contained one sense organ only. One fact brought out by this experiment which appears most astonishing to the lay reader is that no matter what the strength of the stimulus, two grams down to a fraction of a gram, the magnitude of the nerve impulse did not alter, only the frequency at which the impulses passed over the nerve. More pull, therefore, does not make bigger nerve impulses; it only causes them to pass more frequently. Yet, we should expect this result from our knowledge of the way nerves act. They obey the "all or none" principle. Physiologists are accused of being too ardent in their worshiping at the shrine of this law, but it never fails them. It does seem strange, however, that increasing the intensity of the stimulus merely makes the nerve impulses go faster. Adrian has studied not only the stretch organs in muscles, but pressure organs, touch organs, pain organs, and the retina as well, by recording the changes of potential in their nerves when the organs are stimulated, and the result is always the same: increase in intensity of stimulus increases the rate at which the volleys of nerve impulses are shot off.

How does this accord with our own experience, that is, what is the relation between sensation and stimulus? Let us refer back to our original illustration of the boy, the teacher, and the bent pin. If the teacher sits down suddenly on the pin, there results a sharp, vivid sensation of pain, which dies away when the stimulus is removed. On the contrary, if the teacher decides to be a martyr and lowers himself gently onto

the pin, allowing the point to enter his epidermis gradually, the pain will gradually increase with the penetration of the pin. Adrian tried this on a decapitated cat. Now the decapitated cat is legally dead, since it has no head whatsoever, and therefore satisfies the antivivisection laws of England; it must be insensitive to pain because it has lost the seat of its awareness, namely, its thalamus. But physiologically you can keep a decapitated cat alive for two days by administering continuous artificial respiration and keeping its temperature normal. Such a headless cat will kick when its toe is pinched and in many ways astonishes the nonphysiologist when he sees such a preparation. Adrian arranged a sharp pin in a rod and could bring it down suddenly on the sensitive pad of the foot, or by means of a screw could drive it slowly into the flesh. In the first case the frequency of discharge of nerve impulses rose almost at once to a maximum, then after three to four seconds fell off almost equally rapidly; but in the second case, if the pin was gradually pushed into the skin during a period of half a minute, the increase in frequency of nerve impulses kept pace with the penetration of the pin into the skin.

IN CONCLUSION

It seems to me that this experiment is most fundamental. It shows the type of information which our minds get from our sense organs, and it shows the relation between sensation and nerve impulse frequency, and, what is more important, it means that the mental correlate is a very close copy of the physical events taking place in the sensory nerves.

I cannot do better than conclude with the final sentence of Adrian's little book, "The Basis of Sensation." He says of his work: "It does not bridge the gap between stimulus and sensation, but it shows, at least, that the gap is a little narrower than it was before."

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DISCUSSION

Chauncey D. Leake, Ph.D. (University of California Medical School, San Francisco). — California and Western Medicine may be proud of affording an opportunity for the occasional presentation of a general review of significant recent advances in the medical sciences, such as Professor Olmsted's thoroughly delightful "Physiology of the Sense Organs." This is a feature which has made the *Lancet* so valuable to English physicians. Professor Olmsted's charming review is in the best English tradition of sound work wittily interpreted.

The ideas discussed by Professor Olmsted are important not only for the neurologist but for all specialists and the general practitioner as well. One need only consider the manifold derangements which may occur in the receiving apparatus, the conducting system or in the interpreting mechanism, to realize how readily the various disturbances of sensation in disease may arise. Anything interfering with blood or oxygen supply to nervous tissue, or with lipoid metabolism in it, may cause all degrees of malfunction. Practically all drugs, if given in large enough dosage, have some effect on sensation. The mechanism of their various effects in this respect is scarcely investigated, even for general and local anesthetics, or even for morphin, the most satisfactory agent known for the continued relief of traumatic pain. In congestive pain, one may explain the relief afforded by the aromatic analgesics and antipyretics on the basis of Barbour's brilliant studies, which show that these drugs pull water out of such tissues back into the blood, from which it may be lost by passage into the urine and by sweating. The afferent nerve fibers lying along the blood vessels in the viscera, the meninges (*Proc. Soc. Exp. Biol. Med.*, 26:288, 1929), in muscle, bone, and teeth, seem peculiarly sensitive to pressure changes. This has been discussed with reference to headache (*Journal of the American Medical Association,* 88:1076, 1927), one of the commonest of disease symptoms, and is obvious in toothache.

William J. Kerr, M. D. (University of California Medical School, San Francisco). — Doctor Olmsted has pointed out some of the recent and most brilliant contributions in neurophysiology which should be of interest to clinicians confronted so often by disturbances in sensation which cause patients to seek relief. The spirit of inquiry may be strong, but unless the fundamental laws governing the functions of the units in the nervous system are known we are led to fruitless speculation. The discoveries discussed represent true advance.

If sensory and motor nerves serve merely as conductors of electrical impulses, and vary only in the rate of conduction and reception, the mechanisms on either end of the pathways must impart the qualities to sensations to bring about effective response on the motor side.

In the eye the sensory end-organs are modified or adapted for special needs. In the average person the bands of light (radiant energy) embraced within a narrow range of the spectrum stimulate the retina, and for most purposes the extent of the "visible" spectrum is alike in different subjects. However, variations in color perception occur if we are to explain the weird representations of color depicted by some artists and artisans (differing from ourselves who belong to the more numerous group) who deal with colors. The pleasing qualities of certain tints and shades to individuals may be due to alterations in the development of the receptor mechanism in the retina or registration in the brain. Color blindness is an example of disordered perception or registry; and it is of interest that those so afflicted may observe beautiful color effects, *e. g.*, at sunset, when the average person would consider the sky dull and colorless, and would observe no brilliancy of coloring when to most of us the effects were dazzling.

It is, perhaps, more rational to accord to the cochlea the ability to select certain frequencies by means of special sensory endings and to transmit them through separate fibers to the brain. However, work which we have done with the reception, transmission and registration of sound indicates that it is possible to select bands of frequencies by a system of electrical "filters" at any point along the conduction pathway and analyze the composite sound with fair accuracy. It is possible that this analysis of sound in hearing actually takes place in the brain through special development of synapses or the terminal cells. If different frequencies could be transmitted simultaneously over given fibers, it would be necessary to assume the existence of an apparatus for selection at each end of the pathway, tuned so that the bands of frequency would not interfere as in the multiple transmission over telephone circuits. The experiments of Wever and Bray are very ingenious, and further study along these lines should be fruitful.

In the Clinic we use special apparatus to reproduce stated frequencies, within the range of audible sound, to study patients with deafness. It will be found that there are patients with gaps in the normal range of hearing, some bands or frequencies failing to register. In such instances we may suspect defects of the receptor mechanism or in the registration apparatus at the thalamus or beyond in the cortex.

It would appear that the specialized sense organs of taste and smell offer fields for further study. The importance of association in interpreting sensations from these sense organs is apparent.

In the Clinic we are confronted daily with problems related to the peripheral sensations. The interpretation of sensations described by the patient is often of assistance in locating the seat of trouble. We have become accustomed to associate "burning" pain and "throbbing" with congestion, inflammation or swelling of the part; "sharp and shooting" pains with irritation of sensory nerve trunks or ganglia, or perhaps in the posterior bundles of the spinal cord; "dull" and "sickening" pains in the abdomen with forceful contractions of the large bowel; "colicky" pains with contractions of a hollow viscus like the gall-bladder or renal pelvis and their ducts; "vice-like" pain at the heart in angina pectoris; numbness and coldness with arrest of the arterial circulation to the extremities; and "tingling" or "pins and needles" sensations with throbbing when circulation is being restored. Space will permit only brief mention of examples of "imaginary" pain or abnormal sensations referred to the somatic areas, and designated as pain of psychogenic origin. Clinical experience teaches us that the mechanisms on either end of these sensory pathways may participate in the production of sensory phenomena.

Objective alterations in peripheral sensations are manifestly of great aid in diagnosis, especially in the localization of lesions in the pathways to the brain. The methods for testing the state of these sensory functions must be so devised that each one is tested separately. Ordinarily the patient cannot, unaided, distinguish the finer shades of disturbance because the stimulus may be widespread, affecting numerous and varied types of sensory endings. The character of the sensation noted by the patient may not conform to the objective observation. An area of skin in which pain is described may be relatively insensitive to pain or have an altered sensation of pain when pricked with a sharp point. The participation of the brain in these alterations is suspected, but in what manner we do not know.

The studies of Adrian, Lillie, Wever and Bray, Erlanger and Olmsted, are of very great interest to the clinicians as well as physiologists. How much of what is already known in the laboratory can be applied at the bedside is uncertain, but we can hope for a clearer interpretation of symptoms and signs on the basis of this work.

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Herman Adler, M. D. (1043 Life Science Building, University of California, Berkeley).—In the face of the achievements of the nerve physiologist, which seem more and more to approach the precision of the mathematical sciences, it is the pleasant rôle of the clinician to give respectful attention and to applaud. In this discussion of the physiology of the sense organs, Doctor Olmsted modestly refrains from enlarging on his own not inconsiderable contribution to our knowledge of sensation. Among the many important problems which the paper touches upon are several of great interest to the psychiatrist. The problem of sense perception and its relation to pathologic manifestations, such as hallucinations, has been a vexing one because of the difficulties in the way of experimental investigation. The literature is full of attempts at explanations and of various laboratory and clinical tests, but little precise information for development other than clinical or subjective observations. The experiments described by Professor Olmsted give some support to those who regard hallucinations as the result of physical changes somewhere in the path of the sensory systems, from the receptor organs to the cerebral cortex. Such evidence as this bids fair to make a long step toward freeing psychiatry ultimately from the chain of metaphysical speculation and bringing it in line with the rest of the natural sciences.

MUSSEL POISONING

By Wilson Stegeman, M. D.
Crescent City

Discussion *by Hermann Sommer, Ph.D., San Francisco; J. C. Geiger, M. D., San Francisco; Wilfred H. Kellogg, M. D., Berkeley.*

DURING the past summer five cases of mussel-poisoning were seen in Crescent City, the first time that mussels, gathered north of the Klamath River, have been found to contain poison. Other cases, some fatal, were reported along the Oregon coast, also for the first time. With the seeming enlargement of the territory in which cases of mussel-poisoning may develop, and with another summer coming on, it should be advantageous to mention some of the significant features of this little-described disease.

FORMER OUTBREAKS

No outbreaks of mussel-poisoning have ever been reported during the cold months, so that mussel quarantines, where imposed, have never been found necessary between the end of October and the first of June. The continually told theory, that all mussels gathered from below the low-tide line are safe was definitely proved a fallacy during the San Francisco epidemic in 1927. At that time 102 cases were reported within a few days, six of them proving fatal. K. F. Meyer and H. Sommer, of the Hooper Foundation, have very completely reported upon the epidemic and have done a notable work in investigating and tracing the origin of the cases. They followed through several factors, theoretical and practical, in the 1927 outbreak, and several subsequent smaller epidemics. Because some of the features and symptoms are extremely interesting, a few of the more constant ones may be worth a short review, as they were reëmphasized by last summer's cases.

NATURE OF POISON

The origin of the poison found in mussels at certain seasons is not agreed upon. It is not a bacterial poisoning, there being present a preformed toxin analogous to the one found in certain mushrooms. Symptoms like those seen in humans may also be produced in animals, namely, paralyses, coma, and death. The disagreement as to whether the toxin is heat-resistant, or capable of destruction by boiling for a thirty-minute period, has little clinical significance, as mussels are seldom boiled, and certainly never for that length of time; the customary method of preparation being mere steaming until the shells are opened.

The reaction to mussel toxin generally falls into one of three classes. A gastro-enteric type of poisoning is seen, with vomiting and diarrhea, but is rather uncommon. As a rule there is constipation, rather than the opposite, and emesis must generally be induced artificially before it occurs. Otherwise there is a similarity to the usual case of acute food-poisoning. Fatalities rarely follow this type.

There is also the rather rare nervous type of reaction, in which occur itching, urticaria, dyspnea, and occasionally angina. Recovery generally follows in a few days.

CRESCENT CITY CASES

Although not usually in the preponderance, the third, or paralytic type of poisoning, was seen in all of the cases in Crescent City, in various depths of severity. The symptoms and findings resembled closely many of the cases reported during the San Francisco outbreak, although all of the patients had already taken large doses of emetics with good results when first seen. Without exception, all of the patients mentioned as their first symptom either a numbness, starting about the mouth and spreading over the face, or a tingling in the hands and feet, notably the fingers. Two patients, not severely sick, were in good condition the morning following the eating of their mussel supper.

Of the other group of three cases, one had, fortunately, just finished a detective story, depicting the symptoms of various types of poisoning, and was immediately suspicious when he noticed a numbness about his mouth some fifteen minutes after eating a meal consisting wholly of mussels. He insisted that all of his party start for medical help at once, stopping en route at the first farmhouse, where they each drank four or five glasses of warm salt water. They all vomited copiously, and the two most severely stricken probably owe their lives to this prompt elimination of much of the toxic material. They arrived in town, in shock, about two hours after eating the mussels and were put to bed. They staggered, complained of numb hands and feet, but mentioned a feeling of extreme "lightness." In spite of their gaits, they did not complain of dizziness. A liberal hydragogue cathartic was given without result. Their temperatures remained below 97 degrees for six hours, and cardiac stimulants were required for rapid pulses, which, however, remained quite full.

By the next morning one patient had recovered. Of the other two, one was able to stagger about the room, but the other immediately threw his body over backward whenever he tried to stand up without holding to the edge of the bed. In addition to disturbance of their vestibular apparatus, all muscle-sense was absent from the feet and legs, neither patient being able to tell whether his toes were being flexed dorsally or plantarward. The sensation of "lightfootness" was still very pronounced, and the gait severely tabetic. Neither patient could come within six inches of approximating opposite index fingers with his eyes closed. In spite of these features, the cutaneous senses were not disturbed, the deep tendon reflexes were not altered, and the feeling of dizziness only moderate. Mentality was not disturbed.

Both patients continued to improve steadily and without interruption, all of the foregoing symptoms and findings passing off gradually. By the fourth day only the positive Rhomberg and the tabetic gait remained, and they left the hospital. By the end of a week both reported themselves in good condition, except for weakness and inability to do heavy work.

COMMENT

Severe poisoning, of the paralytic type, may follow the eating of mussels during the summer months, due to the occaasional presence of a preformed toxin, the cause of which has not been determined.

The first noticed symptoms are generally a feeling of numbness about the mouth and tingling of the hands and feet, both of them symptoms so often mentioned by supposedly "neurotic" patients that they might be passed over too lightly by many physicians. Another significant, early complaint is a feeling of "lightness."

Recovery is generally complete and fairly quick. In the fatal cases death occurs in a relatively few hours from respiratory paralysis.

The approved treatment is the rapid elimination of the toxic material by emesis, followed by supportive treatment. Because the toxic material does not generally promote increased peristalsis or diarrhea, purges must be given promptly, and in large doses to be effective. However, in view of the rapid absorption of the toxin, the use of cathartics may be questioned, due to the additional shock imposed upon the patient. At the first sign of dyspnea, artificial respiration should be resorted to.

Knapp Hospital.

DISCUSSION

Hermann Sommer, Ph.D. (Hooper Foundation for Medical Research, San Francisco).—The cases of mussel poisoning from Crescent City, reported by Doctor Stegeman, are of considerable interest from several standpoints. They are part of an outbreak of at least fifteen cases originating in five different localities between Crescent City, California, and Bandon, Oregon, from September 4 to October 1, 1933. Most of these were unusually severe; one man died in less than three hours after the meal, while many of the others were saved only by prompt medical attention. Laboratory tests, likewise, showed the mussels from this outbreak to be of the highest degree of toxicity so far encountered.

Sporadic cases have undoubtedly occurred all along the coast of the Pacific Northwest ever since the arrival of the first white settlers. Severe outbreaks of recent years, however, have been confined entirely to the area between the Monterey peninsula and Fort Bragg. During the last seven summer seasons, 211 cases have officially been reported from this area, the outbreaks of 1927, 1929, and 1932 having proved specially severe. Experiences in the area of central California show that a strict quarantine from June 1 to October 1 is sufficient to prevent more serious epidemics. These recent cases from the northern district will make an extension of the quarantine for at least one month imperative. It is interesting to note, in this connection, that in 1933 the only outbreak in the central California area consisted of seven mild cases originating from one batch of mussels collected at Pedro Point on July 9. Concerning the northern limit of the area affected during the past season, we have only scant evidence. Mussels and clams of October 1 from the Coos Bay district proved highly poisonous in the laboratory, while samples from Cannon Beach, in northern Oregon, were entirely free of poison on October 18. That the northern limit had not been reached, however, is shown by two samples from the Puget Sound, of August 8 and September 17, respectively, which showed the same degree of toxicity prevalent at that time near San Francisco.

It is difficult to predict the chances for further disturbances along this part of the coast. The statistical evidence would indicate that mussel poisoning runs in cycles of several years' duration, and it is not unlikely that the cases described by Doctor Stegeman are the first of a series to follow during the next few years. Since mussels will always be consumed in spite of any quarantine measures imposed, it will be wise to be on the lookout for cases of this disease during the summer and early fall, especially in the northern part of the state.

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J. C. Geiger, M. D. (1085 Mission Street, San Francisco).—As a result of scientific investigations carried on for a number of years at the George Williams Hooper Foundation for Medical Research of the University of California, the California State Department of Public Health has, for several years past and for suitable seasonable periods, issued warnings against the use of mussels as food. Cases of poisoning have been reported particularly in counties north of San Francisco. Previously, Meyer, Sommer and Schoenholz [1] had reported a source of danger in the mussel in California which evidently can be attributed to poisons that occur within the food itself. Though the origin of the poison was not definitely established, it was determined that the poison is not formed by bacteria, thereby eliminating the question of polluted basins; that the poisonous mussels cannot be distinguished from the safe; that the poison is heat stabile in acid solutions, and also that the poison is probably the result of a metabolism disease influenced by the food and spawning condition of the shellfish. Apparently it may be necessary to establish, at least for California, and possibly for Oregon, a closed season for the summer months for the use of mussels.

Moreover, epidemiologic evidence is accumulating to the extent that, in areas of the California coast, the poisoning does occur periodically in an increased number of human cases. This periodic increased incidence was manifest in 1927, 1929, and 1932. Should this epidemiologic assumption be correct, then there may be anticipated for 1934 a marked epidemic recurrence of the poisonings in the selective seasonal periods, namely, the summer months, and particularly, June, July and August, provided like conditions in the mussels of previous high-incidence years obtain. The most interesting and valuable observation of recent research in these poisonings has been that of H. Muller,[2] of the Hooper Foundation, which shows that the addition of ordinary bicarbonate of soda to the cooked mussels, in such small amounts as a tablespoonful to a quart of material will, in experimental laboratory animals, either reduce the effect of the poison or quite often cause it to be avoided entirely.

The symptoms of tingling or numbness around the lips, and a prickly feeling in the finger-tips and toes thirty minutes or longer after eating mussels, should be notification to call for a physician immediately.

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Wilfred H. Kellogg, M. D. (State Hygienic Laboratory, Berkeley).—Mussel poisoning comes in the category of accidental poisonings with food materials that are widely used and ordinarily harmless, but that for various reasons occasionally have lethal properties. Botulism is one where the poison is due to bacterial contamination and improper canning methods; mushroom poisoning to error in selecting a poisonous species; and poisoning by mussels, possibly due to physiological change, is to be guarded against by observing seasonal danger periods.

As Doctor Stegeman has observed, the explanation of this occasional toxic condition of mussels is not definitely known. The seasonal occurrence of toxicity, and the certainty that spoilage or bacterial toxins have nothing to do with it, is suggestive of something analogous to the poisonous qualities of certain other forms of life in connection with ovulation; but the varying intensity in different years remains unexplained. Another possibility is that the poison has its source in some food supply of the shellfish, not, however, of a bacterial nature.

The varying symptoms that have been reported show that not all cases of mussel poisoning are due to the specific toxin. A few cases do not manifest the classical paralysis, but instead have gastro-intestinal symptoms or urticaria and dyspnea. The former can well be ordinary bacterial food poisoning, and the latter a manifestation of protein hypersensitiveness.

The prevention of mussel poisoning is entirely a matter of education. If knowledge of the possibility were universal, poisoning would be restricted to those who disregard the obvious precaution of eliminating mussels from the diet. There is nothing in the theory that mussels gathered below the low tide level are safe, or that cooking destroys the poison. Cooking, with the addition of a tablespoonful of bicarbonate of soda to the quart of water, does, however, destroy a considerable portion of the toxin.

[1] Meyer, K. F., Sommer, H., and Schoenholz, P.: Mussel Poisoning, J. Prev. Med. 2:365 (Sept.), 1928.

[2] Muller, H.: Mussels and Clams—A Seasonal Quarantine—Bicarbonate of Soda as a Factor in the Prevention of Mussel Poisoning, Calif. and West. Med., 37:263 (Oct.) 1932; 37:326 (Nov.), 1932.

THE RADIOLOGIST IN THE HOSPITAL—HIS STATUS*

By Lowell S. Goin, M. D.
Los Angeles

Discussion *by Henry Snure, M. D., Los Angeles; L. H. Garland, M. D., San Francisco; Charles M. Richards, M. D., San Jose.*

THAT the relationship of the radiologist and the hospital, and the varying activities of hospital departments of radiology, present a problem will be generally admitted. That these relationships and activities offer a serious threat to the private professional activities of radiologists, and indeed to practitioners of medicine in general, is frequently postulated. Right or wrong, the physician feels that there is a growing tendency of the hospital to exploit him; to attempt to profit through his professional skill; and he fears that the end of it will be that he will become the hired employee of the hospital. The hospital, on the other hand, feels that the conduct of a department of radiology is an activity proper to the hospital; that it is, by the very nature of things, forced to conduct a department such as this, and that it is very likely that such a department may be made to show a profit.

PROBLEM OF THE RADIOLOGIST AND THE HOSPITAL

Obviously, the solution of a problem cannot be arrived at until and unless the problem is clearly stated. It is in the hope of stating this problem, as well as of helping toward its solution, that this material is presented. Just what is the problem, therefore, that we feel is present? We complain; we feel aggrieved; we say to each other that we are being exploited, that our professional prerogatives are being infringed upon. What is it that we complain of? Are we being exploited? Is the problem general? Or are we being confused by local situations arising from local jealousies, personal prejudices and the like?

*Read before the Radiology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

TO WHOM A QUESTIONNAIRE WAS SENT

It was in the hope of being able to answer these questions, of being able to state clearly the problem, and of determining whether it is a sectional or a national situation, that questionnaires were sent to three hundred and seventy roentgenologists, representing practically the entire membership of the American Roentgen-Ray Society. Since the membership of this society is, in general, comprised of men of considerable training and experience, and since, in general, it might be expected that these would be among the established men in each community, and since the scope of questionnaires covered the entire United States, it is reasonable to assume that the conclusions drawn from the survey are a fair cross-section of the national condition of radiologists and their hospital relationships. In spite of the fact that 10 per cent is a fairly good return for a questionnaire of national scope, three hundred and sixteen replies (or over 85 per cent) were received, and it may be remarked that this figure indicates the degree of interest felt over the entire country in the whole question.

SOME REPLIES

The questionnaire was very simple. The most casual survey of the replies showed that almost everyone either misunderstood question No. 3—"Have you complete control of the department?"—or had not reflected deeply on the meaning of "control." Almost everyone answered this question with "yes," but answered question No. 4—"Who owns the equipment?"—question No. 5—"Who hires and discharges the technical and office help?"—and question No. 6—"Who pays the salaries of the department employees?"—with the words, "The hospital." Since it is still true that "he who pays the piper may call the tune," it is a little difficult to see just what control a man may exercise over a department owned and disciplined by a hospital, and conducted for the hospital's profit or at the hospital's expense. Therefore, it has been decided, purely arbitrarily, that the answer to question No. 3 shall be considered to be "no" unless the answer to question No. 5 is "the radiologist"; it being conceded that if the radiologist possesses disciplinary power over the various assistants in the department, he is, in fact, in control of it. No other changes have been made in any of the replies.

Of the 316 men who replied, 272, or 86 per cent, have a hospital radiological service. A considerable number have more than one service, so that 272 men serve 342 hospitals. Of these, fifty-three, or 21.8 per cent, are full-time employees of hospitals, and 190 are on a part-time basis. Stated differently, and from the standpoint of the number of hospitals served, fifty-three hospitals have full-time radiologists, while 289 hospitals have part-time men in charge of their x-ray departments.

TYPES OF COMPENSATION

About 6 per cent (fifteen) of the radiologists so engaged received nothing for their services. This peculiar phenomenon seems to be confined to the eastern states, and almost entirely to New York City. Seventy-five radiologists (30.9 per cent) receive a salary for their services, while 154 (63 per cent) are allowed a percentage of the department receipts. Of those receiving a percentage, fifty (30 per cent) divide the net receipts of the department, while 104 (70 per cent) share in the gross receipts, the percentage received by the radiologist varying from 30 to 85 per cent of the gross.

The x-ray department is under the actual control of the radiologist in 124 hospitals, while in 177 hospitals he has no real control. In 218 instances the hospital owns the equipment of the department, and in eighty-seven hospitals the radiologist is the equipment owner.

The salaries of the department employees are paid by the radiologist in fifty-one hospitals, but by the hospital in 243 institutions.

Only in twenty hospitals is the radiologist not a member of the senior staff.

Two hundred and seventy-two radiologists derived 36.6 per cent of their professional income directly from their hospital connections. Only ninety-five of those reporting expressed themselves as dissatisfied, but it is very likely that this question was misunderstood, many having apparently considered the inquiry to be whether they considered themselves adequately paid for their services.

COMMENT ON THE ABOVE

From the foregoing we may now represent to ourselves, with reasonable confidence, the average radiologist in his relationship to the average hospital. He is a man having a private practice of his own, serving a hospital as its radiologist on a part-time basis, and being paid therefor by receiving a percentage of the gross receipts of the department. No fault can be found with this arrangement, provided:

1. That he is selected on the basis of his professional skill and reputation, rather than because he will accept a smaller percentage of the receipts than another physician.
2. That he is in control of the department.
3. That the division of the gross is on such a basis that the percentage retained by the hospital is that which fully covers the expense of conducting the department.
4. That he is a member of the senior staff.
5. That the hospital does not compete with him in his private practice, or at least that it does not do so on an unfair basis, such as lowering fees and the like.

COMMENT

But are these conditions commonly met? The twelfth question of the questionnaire which furnished this material concerned any comment the respondent cared to make. Nearly everyone answered this in from a few words to several pages of remarks concerning his own situation in particular, or the situation in general. It will be appropriate here to quote or give excerpts from a few of them: "They (the hospital executives)

feel that the x-ray department should be a money-making activity of the hospital."

(Speaking of the boards of trustees): "Their obsession is the use of the radiological department as a source of revenue for the hospital; an attitude that they never take toward surgery or where other staff members are concerned."

"The directors (of the hospital) want an increasing percentage as the volume is increased by the efforts of the radiologist."

"There is a definite tendency on the part of hospital administrators to exploit the roentgenologist." (There were a great many comments of this nature.)

These remarks, chosen from many because they are by men in widely separated parts of the country, voice the feeling of nearly every radiologist: That the hospital has no right to profit by the conduct of its x-ray department, because the activities of that department are essentially those of its director, the radiologist, and are therefore purely professional. For this hypothesis we have formidable support. The Council on Medical Education and Hospitals of the American Medical Association has stated plainly that radiology is the practice of medicine, and has long recognized it as a medical specialty. One of the sections of the scientific assembly of the association is that of radiology. The Council of the California Medical Association has taken the same position. One may, therefore, confidently say that the use of the x-ray in and for the diagnosis and/or treatment of disease constitutes the practice of medicine. This being assumed as a premise, one may next inquire whether a hospital should, as a matter of ethics, or may, as a matter of law, practice a medical specialty? A corporation is a fictitious person, existing only in legal contemplation and, as such, cannot be licensed to practice a learned profession. The Supreme Court of Nebraska points out that "while a corporation is in some sense a person, ———, yet it is not such a person as can be licensed to practice medicine."

But, it may be argued, the hospital is not practicing radiology; it is merely engaging a physician to do so. If the hospital does not profit by the professional activity of a physician so engaged, the argument may be tenable. But this is certainly not the case with those hospitals employing salaried radiologists and representing 30.9 per cent of the hospitals on which returns were had, and it is doubtful whether it is the case in the hospitals paying their radiologists by a division of the net proceeds, which represent about 30 per cent. If a hospital, or any corporation, hires a physician, accepts a patient for x-ray examination, and collects a fee, is it the hospital or its hired physician that is practicing radiology? A parallel question has been answered by the Supreme Court of Minnesota, in the case of *John Granger* vs. *Adson, et al.*, as individuals and as members of the State Board of Medical Examiners. In this case the court held that a layman could not conduct a health audit service, furnishing urinalyses and blood pressure tests, through the medium of employing a licensed physician to do the actual work, and it held that in so doing, the plaintiff in this case was practicing medicine unlawfully. The court further held that the plaintiff's contract with his physician was illegal and in violation of the statute. In summing up the matter the court stated that "the law intends that the patient should be the patient of the licensed physician, and not of corporations or laymen."

Such activities of a hospital lead to further abuses. The physician, knowing that he is engaged in the practice of a learned profession, and bound by the code of ethics thereof, cannot cope with the type of competition offered by corporations not so bound. Comment on this aspect of the matter, such as the following, selected from widely separated places, was offered by numerous men:

"The hospitals compete with the private practitioner, and attempt to secure his private practice."

"Both hospitals compete with me in private practice, and I have no control over the fees charged." (The author of this comment serves both of the hospitals referred to, and therefore, of course, he is actually competing with himself.)

"——— Hospital receives non-hospitalized patients for x-ray examination, and for the sole purpose of adding income to the hospital. In other words, this tax-free institution, with equipment that has all been donated, is actively competing with me in my private practice."

"The hospitals here are slowly, but surely, taking most of our private practice, and we are doing the work for them."

As an especially apt illustration of the point in question, a man who is radiologist to a hospital with five hundred beds in a large city, writes: "The hospital insists that the members of the staff send all of their x-ray work to the hospital, ignoring Doctor ——— and myself. They make no effort to charge or collect more than the cost of the films, and the average fee for a gastro-intestinal examination is $5. How can one expect or hope to conduct a private practice, and to do good scientific work in the face of such competition?"

One man sounds an ominous note of warning when he writes: "The same thing which has happened in radiology has happened in many localities in other fields of medicine."

CONCLUSIONS

We may now, perhaps, attempt to draw some conclusions from the replies received.

1. The great majority of radiologists have some sort of hospital service, and from it they derive a percentage of their professional income, varying from less than 5 to 100 per cent. The general average is 36.6 per cent.

2. The average radiologist reports that he is compensated by a percentage of the gross receipts of the department; but one need not be surprised to discover that there is considerable misapprehension of the meaning of "gross income," since many used such expressions as "gross after supplies," "gross after salaries," etc.

3. Except for university hospitals, almost none of the great hospitals of the country employ salaried radiologists, and very few of the nationally

known men replying are on a full-time basis. This, again, is excepting men with teaching positions.

4. There is an increasing tendency of the lesser hospitals to employ a salaried radiologist.

5. There is an increasing tendency of the hospital to regard the department of radiology as a source of income.

6. The majority of radiologists have no control over their departments.

Finally, we may inquire whether there is any workable and practical plan which will solve the difficulties we have discussed; that is, whether such plan or plans are in operation, and what comments were made by men working under such arrangements? There are plans of operation of hospital x-ray departments which are eminently satisfactory to both the hospital and the radiologist. The plan used by Doctors Groover, Christie, and Merritt is perhaps the best known, and is certainly a well-tried one, being, in brief, this: The hospital provides and arranges adequate space, and installs equipment selected by the radiologist. The amount to be expended is agreed upon, and any amount above this figure is furnished by the radiologist. The radiologist agrees to furnish full-time service in the department, and accepts full control of and responsibility for the department. He undertakes to maintain the department, making all necessary replacements of, and additions to, the equipment, and to employ and pay all necessary assistants, and to furnish all supplies, etc. He agrees to do any reasonable amount of work for deserving poor patients without charge for his services, and for exceptionally poor patients without charge for either service or materials. The radiologist collects and retains all fees and pays the hospital an annual rental.

Of the three hundred and sixteen men replying, eighty-seven own the x-ray equipment of a hospital, and conduct their private practices in the hospital. In one instance the hospital and the radiologist own the equipment jointly. This plan is, of course, free from criticism, since it really amounts to a physician leasing office space from a hospital rather than from an office building.

How do such plans work out in practice? From a large hospital in a large city comes this reply: "Because of the high standards our department maintains, the trustees have felt satisfied with the arrangement despite the fact that the department is not a source of income. Of course a properly managed roentgen department indirectly increases the hospital income." From another large city is this comment: "This is the only way we would do hospital work. We bring a steady flow of therapy cases to the hospital, and much of the diagnostic work comes because of our connection"; and again: "The hospital is well satisfied, although the department produces no income for the hospital, because of the high standards maintained by the department of radiology."

BASIC PRINCIPLES

Apparently, then, it is possible to conduct a hospital department of radiology in a manner free from objectionable methods complained of, and in a manner satisfactory to both the hospital and radiologist. To do so, requires only that all concerned recognize clearly:

1. That the practice of radiology is the practice of medicine.

2. That radiology is a medical specialty.

3. That hospitals and/or other corporations should not engage in the practice of medicine, and,

4. That radiologists should not enable hospitals to engage in the practice of medicine by becoming their salaried employees.

1930 Wilshire Boulevard.

DISCUSSION

Henry Snure, M. D. (1414 South Hope Street, Los Angeles).—At the request of Doctor Goin, I reviewed the questionnaires that were returned, and I believe that he has given an accurate and excellent résumé of the same. The majority (63 per cent) of those operating radiological departments in hospitals were on the percentage basis; the most unsatisfactory arrangements, of course, were those of the fifty radiologists who were paid a percentage of the net income, and due, perhaps, to the depression, some hospital business managers include items that do not properly belong under operating costs of the department. The statement was made many times that a percentage of the net arrangement is a slow but sure form of professional suicide. Another frequently repeated complaint was that any profit the hospital derived from the salary or percentage plan was diverted to the general fund to cover deficits in other departments, thereby allowing the radiological department to deteriorate. In other instances, hospitals did not live up to their agreements; one of these could hardly use the present depression as an excuse, for it agreed ten years ago to keep the department up to date in the matter of equipment, and yet had not purchased any new equipment during the ten-year period. Naturally, the department has much less income now than when it was first installed.

In other instances roentgenologists have installed equipment in hospitals and gradually built up the income of the department, only to have the hospital management demand a larger percentage. In one such instance, the roentgenologist was glad to sell his equipment and get out. This particular department is now being operated by his former technician, and no change in the rating of the hospital has been made by the College of Surgeons. Sometimes the radiologist has built up a good income for the department, and as a reward has been promptly discharged when someone else was found who would accept the position at a lesser percentage of the income.

There were several examples of the following: Fifteen to twenty years ago, departments were installed and, until recently, operated by the same radiologist; when he was discharged, and so-called business management applied to the department. Apparently, the result was the same in all cases: the various economies, such as cheap technical help, were applied, and promptly and markedly decreased the departmental income. Not only were the radiologist, patient, and referring physician dissatisfied, but also the hospital itself.

Occasionally, where the radiologist was frankly dissatisfied with his particular arrangement, he would suggest what he believed to be an ideal agreement; yet reports from other questionnaires would show that such an agreement had been tried and found wanting. As an example, a physician in the Southwest thought that it would be a good plan to have the hospital equip an x-ray department, pay technicians, and charge only for the technical service; the radiologist to put in a separate bill, the same as a surgeon would. Just about one hundred miles north of this physician's location such a plan was being tried, and was very unsatisfac-

tory. In this case the hospital collected for the technical charge, and the majority of the patients refused to pay any professional charge; having paid one radiological fee, they claimed that was enough, and apparently the hospital did not exert itself to explain or further collect from the patient. It seems difficult to convince the patient and others also that a cheap fee can only mean cheap service, and so in the end they get just what they pay for. Of the seventy-five roentgenologists doing work on a salary basis, very few are on full time after the number of teaching positions have been subtracted; the majority are receiving salaries for part-time work at government-owned or small hospitals. As Doctor Goin pointed out, the hospital employing a roentgenologist on a salary is really a corporation practicing medicine, and therefore, for the same reason, the roentgenologist should avoid making such an agreement.

In some of the larger hospitals the clinic or charity work was done without a professional charge in lieu of rent; again, others paid 10 per cent of the gross income as rental, when the equipment and technical cost was paid for by the radiologist. Under the heading of "Remarks," one reply states that previous to 1930 the percentage basis was satisfactory; but that the tremendous increase of free work, and the accompanying decrease in both number of cases and scale of fees from those able to pay, does not provide sufficient income to cover expenses.

Many of the radiologists believe that the radiological department should be equipped by the hospital and leased to them, perhaps on some form of gross percentage, something on the order of the Christie plan. Two of those replying stated that any type of percentage basis smacked of fee-splitting.

I believe that our national radiological societies should consult the College of Surgeons and the American Medical Association Council on Medical Education and Hospitals, with the idea of calling their attention to some of the questionable arrangements between hospitals and radiologists; these arrangements to be considered when the rating of the hospital is determined.

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L. H. Garland, M. D. (450 Sutter Street, San Francisco).—The author is to be congratulated on collecting and analyzing a large number of *facts* on a subject about which there has been much discussion, and concerning which many unfounded opinions have been expressed. The status of the radiologist in the hospital is, in general, not sound. What can be done to make it sound without at the same time interfering with the rights of the hospital in the matter? Doctor Goin suggests that one solution would be for the radiologist to rent space and major equipment from the hospital, reimbursing the latter monthly, and thereat conduct a practice of radiology. This would appear to be a simple, fair and practical method of solving the problem in many institutions.

What are the criticisms of this method? From the point of view of the profession, I doubt if there are any valid ones. From the point of view of the hospital superintendents, I have heard voiced the following criticisms, which I shall attempt to answer seriatim:

First criticism: "Hospitals, needing all the income they can get hold of in order to operate, would go into the red without the profits from the x-ray departments." The answer to this criticism is that the "rent" provided by the radiologist will supply the hospital with adequate income to prevent going into the red, as far as such can and should be prevented by any one division of the hospital alone. Parenthetically, it may be noted that the present basic ward bed charge of approximately $3.50 per diem is hardly a true one; actually, the cost is probably much higher, the difference at the present time being made up from the profits from the x-ray and laboratory departments, and it seems unfair that patients who do not require such procedures as x-ray and laboratory work should at present be receiving the benefits of them indirectly. That is to say, the profits made from patients requiring x-ray work, etc., are now applied to lowering the per diem bed charges of patients not needing such work. This could be gradually rectified under a rental arrangement.

Second criticism: "The radiologist is not practicing medicine and, therefore, is not entitled to an arrangement based on the assumption that radiology is the practice of medicine." This criticism is frequently made because of the fact that much, or all of the technical work of radiography is done by the technician, and because sometimes the radiologist merely sees the films and not the patient. This is a comprehensible criticism, if based on these grounds. However, it must be noted that the incentive to treat patients as individuals, to establish a close personal contact with them, is not encouraged in any form of salaried or other "hired type" of appointment. In those hospitals, wherein the radiologist is on a percentage basis, it will often be found that he is keenly interested in seeing the patients, and not infrequently radiographing them himself; that is to say, he practices medicine as he would in his own private office. However, just as the surgeon may have his nurse remove stitches or change a dressing, just as the internist may have his assistant inject some iron cacodylate or take a blood pressure, so will the radiologist have his technician take films of the chest or lumbar spine. Because the surgeon and the internist frequently delegate those technical matters to lay assistants is no ground for stating that they are not practicing medicine. Similarly, because the radiologist delegates much or all of his technical radiographic work to technicians, is no ground for stating *he* is not practicing medicine; his interpretation of the films and fluoroscopic examinations, and his consultations with the clinician seem to be very definitely the practice of medicine. In addition, most radiologists do therapeutic radiology; no one will gainsay that this constitutes practicing medicine.

Incidentally, it appears that, strictly speaking, the technical side of radiography cannot be undertaken as such by lay persons or a corporation. Since the taking of x-ray films involves a knowledge of anatomy and involves the application of a rather dangerous agent (the x-ray) to a portion of the human body, it would seem to be very definitely the practice of medicine, and therefore something that should only be done by a duly licensed physician and surgeon, or by a trained assistant under his close supervision and control.

Third criticism: "The radiologist has no right to have provided for himself a monopolistic practice." The practice of radiology in a hospital unquestionably tends to be somewhat monopolistic in nature. The reason for this is obvious: even granting that a hospital could legally furnish supplies and technical help, no department has ever yet been able to function satisfactorily without a permanent director in charge. If the department were run unsupervised and open to any radiologist or physician who chanced to come in and use it, the difficulty of securing safe, consistent and reliable records would be very great. By the very nature of the overhead involved it is, of course, impossible to have several x-ray departments in the same hospital. However, in most hospitals, if any attending clinician desires that one of his patients be examined by an outside competent radiologist, he can always secure such by merely requesting the resident radiologist to extend that courtesy. Hence, as far as that aspect is concerned, there is no essential monopoly. Lastly, the hospital does not actually provide the practice; the attending physicians, and the radiologist himself to a variable extent, provide that practice.

Fourth criticism: "The radiologist would make too large an income on a rental basis." The answer to this criticism involves the definition of what is too large an income. If by too large an income is meant one disproportionate with that received by the hospital, because of the fact that the rental paid does not

represent a fair and adequate one, then this criticism is sound. Again, if the fees charged by the radiologist are such that he is obviously capitalizing on his appointment, it is evident that his income can be too large. (In both these instances, the errors can be speedily corrected as outlined below.) If, however, by reason of his skill and professional competence the radiologist earns a large income, then the hospital can have no criticism to make; indeed, it is in a fortunate position, since by the very nature of the volume of x-ray work involved, the hospital will be the gainer both in room occupancy and otherwise. The conscientious radiologist of necessity employs a considerable number of well-trained and well-paid assistants, spends a considerable portion of his income on new diagnostic and therapeutic adjuncts, and is usually under a strong incentive to do much deserving clinic work. If, on the other hand, he is not conscientious, the executive staff of the hospital has the power to recommend the termination of his appointment.

I sincerely believe that some form of solution such as the above is a satisfactory one for the problem presented. The hospital does not relinquish control of the department, inasmuch as the rental contract can be annulled at any time (by either party) upon reasonable notice, and the personnel of the department and its general policies are subject to approval by the hospital. The rental plan would aid in establishing the status of the hospital fairly in medical practice, and quite as fairly in establishing the status of the radiologist in the hospital.

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Charles M. Richards, M. D. (303 Medico-Dental Building, San Jose).—This survey which Doctor Goin has made for us is one of real value—which cannot always be said of reports on questionnaires. The chief basis of its value lies in the fact of the unprecedented response which it received and the widespread geographical distribution of that response. With an 85 per cent response from such widely separated parts of the country, no one can doubt the validity of the deductions drawn from this investigation.

It appears that only a small proportion of the leading radiologists of this country consider their own hospital relations ideal, and that a great deal of educating needs to be done if hospital executives and trustees are to realize the justice of the radiologist's claims. The abuses of the radiological department of hospitals have been going on for so many years that they have come to be taken as a matter of course. Hospital budgets have been set up, allowing for a profit from the x-ray and pathological departments to make up for some of the losses in the surgery, rooms, and wards. It has been considered quite a legitimate thing, and no one, until recently, has risen to expound the injustices of the practice. I am sure that we all believe that practically all the public-spirited laymen who give so much of their time freely, acting as directors and trustees of the hospitals of our country, would not knowingly work an injustice to any member of their professional staffs, though, in their enthusiasm to see their hospital get along, they have been parties to the exploitation of their radiologists and pathologists. I feel convinced that a great deal can be done by all of us in the education, along these lines in a quiet way, of our lay trustees, and the majority of them will eventually see our point of view and agree with us. Also the hospital executives, who are laden with the burden of running their hospitals with as little loss as possible, will be open to reason, and will eventually unlearn the lesson which has become firmly fixed in their minds, that the professional efforts of the radiologist and pathologist are legitimate sources of profit to the hospital. The American Hospital Association and the hospital section of the American Medical Association are showing a willingness to assist in this reëducating, and I believe that we shall soon be speaking to more receptive ears than we have in the past.

COMPULSORY HEALTH INSURANCE*

By Frederick L. Hoffman, LL. D.
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IV

IN the background of all social insurance propaganda looms the spectacle of the economic distress of the medical profession. From practically every country come alarming reports of an oversupply of doctors, the growth in number being disproportionate to the growth in population. In the words of Dr. Alfred Cox of the British Medical Association, in an address on "A General Medical Service for the Nation," delivered last July before the Royal Sanitary Institute Congress at Blackpool, "all the resources of medical science should be available to every citizen of this country." To achieve this purpose, however, would stretch the resources of any country to the breaking point. Once more, in the words of Doctor Cox, "A scheme was wanted which would gather together all the various means, individual and institutional, for the promotion of health, and the cure and alleviation of diseases, and make them available to everybody." Such an idea, it may safely be asserted, is a hopeless dream.

RATIO OF DOCTORS TO POPULATION

The statement is frequently made that in the United States the ratio of doctors to population is much higher than elsewhere. In 1931, it was calculated that the ratio of doctors to population was one in 800, as compared with 884 for the British Isles, 900 for Austria, 1250 for Switzerland, 1560 for Germany, and 2860 for Sweden. Yet the death rate for Sweden in 1932 was only 11.6 per 1000, as compared with 11.2 for the United States, and 12.0 for England and Wales.

The "Social Dangers of an Oversupply of Physicians" are admirably presented by Dr. Walter L. Bierring of Des Moines, Iowa, in a paper read at the annual conference of Secretaries of Constituent State Medical Associations, September, 1933, and reported upon in the American Medical Association *Bulletin* of February, 1934. Doctor Bierring observes that "over a ten-year period the number of medical graduates greatly exceeded the number of deaths in the medical profession." And further: "According to the final report of the Commission on Medical Education, the United States has more physicians per unit of population than any other country in the world, twice as many as the leading countries of Europe. With a total of 156,440 licensed physicians in the United States at the present time, there is one for every 780 persons." He estimated that a reasonably complete medical care could be provided in this country on the basis of one physician to about 1,200 persons, and that an adequate medical service for the United States could probably be pro-

*One of a series of articles on compulsory health insurance, written for California and Western Medicine by the well-known consulting statistician, Frederick L. Hoffman, LL.D. Articles in this series were printed in previous issues, as follows: I, in April, page 245; II, in May, page 361; III, in June, page 411.

vided by about 120,000 active physicians instead of 156,440. According to these figures, there is at present a surplus of approximately 35,000 physicians.

Bierring, therefore, estimated that if the present rate of supply is continued, the number of physicians in excess of indicated needs will increase, and he arrives at the conclusion that "by 1940 there will be in round numbers 171,700 physicians, and in 1980 about 211,800. The number of persons per physician in 1940 will be 760; in 1960 about 730, and in 1980 about 690. Even at the present time it is reported that in many urban communities there are two doctors for every call, and many can barely earn a decent living."

The English author of "This Panel Business" (already referred to in a previous paper) observes, in this connection, that "in 1931 the question of the alleged plethora of doctors was raised, and it was decided to issue a questionnaire to the various countries, and to put the subject down for discussion at their [the Association's] next annual conference." Dr. Alfred Cox of the British Medical Association reviewed the subject of overcrowding of the profession, stating that "This subject was reported on by Doctor Mattlet of Belgium, who based his report on the questionnaire issued early in 1932. This report disclosed a really terrible state of things in many countries—indeed, this country and Canada are the only two in which there is not at present, or threatened in the early future, a great surplus of supply of practitioners over the demand, particularly of 'specialists,' the number of medical students being positively alarming in many countries. Taking the period, 1900-30, the figures showed a constantly decreasing number of potential patients per doctor in every country, though there were still many rural areas which seem to be undersupplied with doctors. Doctor Mattlet examined the causes at some length, and showed that the consequences were a dangerous lowering of the morale of the profession. He declared that in some countries there was now a 'medical proletariat,' which was a menace to society, and this view was emphasized particularly from Germany, Austria, and Hungary."

INCOMES OF PHYSICIANS

According to a treatise on "The Way of Health Insurance" by Simons and Sinai (published by the University of Chicago Press in 1932), in Würtemburg in 1928, 9.84 per cent of the insurance doctors received incomes of less than $720; 15.15 per cent received incomes of from $720 to $1,440, and 23.72 per cent received from $1,440 to $2,400. In the state of Baden, Germany, in 1929, 16.45 per cent of the insurance doctors received incomes of less than $1,000. When allowance is made for the difference in the cost of living, the situation in this country is not much different from that in Germany. According to the Julius Rosenwald Fund, there were 28,000 specialists in this country in 1929 whose incomes exceeded $10,000 a year; 25,000 partial specialists with incomes of $6,100; 142,000 practicing doctors with incomes of $5,500; 68,000 general practitioners with incomes of $3,900, and 25,000 general practitioners with incomes of less than $2,000. These are net incomes of men who have paid substantial sums for their education, although in 1929 many of these had less than $2,000 to live on. Of the doctor's gross income, 40 per cent is spent for professional expenses. In the aggregate, the Fund estimates that in private practice, in 1928, physicians were paid about $1,100,000,000 in fees from their patients, but that only about $660,000,000 of that sum was left to live on, because they had to spend $440,000,000 for professional expenses, such as office rent, transportation, equipment, and assistants.

LURE OF PANEL INCOME TO YOUNG PHYSICIANS

Under conditions like these the young medical graduate is naturally eager for permanent employment, regardless of the compensation which, in most instances, is adequate to provide him with at least a minimum of subsistence. It is from this element that the panel in national health insurance is recruited to a considerable degree.

EXTENSION OF MEDICAL CARE FROM INDUSTRIAL WORKERS TO THEIR FAMILIES

The Committee on Medical Education (U.S.A.) made an illuminating report on the subject, with particular reference to Europe, published in April, 1930. In discussing sickness insurance, it was stated that "national sickness insurance has a very important influence on medical practice." It was the main object of social insurance, in early days, to provide cash benefits to persons incapable of working, instead of providing treatment. Everywhere the tendency is to bring in dependent members of the family subject to medical care on the part of the panel physician, which of course increases his responsibilities, but does not materially contribute to his increased earnings. In England, at the present time, 35 per cent of the total population is covered by national health insurance, or respectively 78 per cent of the occupied population, 86 per cent of the employed population, and 95 per cent of the employed population of insurable age. Medical benefit consists of a general practitioner service, but does not cover the services of a specialist, and is limited to the insured person only, not to his or her family. Aside from this, of course, children of school age receive a certain amount of general medical care from school physicians. Maternity benefits consist of a payment of forty shillings on the confinement of the wife of an insured man. If both the man and wife are insured, the maternity benefit is doubled. A woman who has received a maternity benefit is not entitled to a sickness or disablement benefit for a period of four weeks following her confinement. Sickness, disablement or maternity benefits are not payable to any person

who is a patient in a hospital supported by charity, by voluntary contributions, or by public funds. Sickness or disablement benefit is not payable for accidents or industrial diseases covered by the Workmen's Compensation Act. Out of these classifications arise no end of complexities which place a heavy burden of time and thought on the attending physician. The rules and regulations governing the system are numerous and burdensome.

SOME DANGERS AND DEFICIENCIES OF PANEL PRACTICE

In actual practice, it is true, the system has worked out better than was anticipated. The prosecutions for failure to conform to state requirements, or rules and regulations, are relatively few. On the other hand, the subserviency of the physician to the system hides many defects and deficiencies. The administration of the system by approved societies, to the extent of paying of benefits, makes the latter an impressive body with authority over physicians' activities. The latter being confronted by the duty of certifying sickness, most naturally adopt a course of easy acquiescence to avoid constant conflicts with the clients on his panel. The approved society is one of several bodies the doctor has to deal with, the national health insurance act having created about two hundred insurance committees in England, Scotland, and Wales to administer medical benefits with regard to certain features of local administration. These committees distribute the money sent by the Ministry of Health to the doctors in their areas in accordance with the number of persons on the list of each panel physician. The insurance collections are pooled for the entire country, and the pool is divided according to districts on the basis of the number of insured persons in each district. The amount assigned to each district, divided by the total number of insured persons in the area, sets the capitation fee, which has varied from time to time. The present capitation fee is nine shillings per insured person per year. But the compensation has been reduced to eight shillings for the time being and hope for restoration of the cut is very doubtful. According to the Supplement to the *British Medical Journal* of January 14, 1933, "The reduction of the capitation fee fifteen months ago, accepted by the Insurance Acts Committee, was met by insurance practitioners with a good deal of criticism in the correspondence columns of the Supplement in the last quarter of 1931. This criticism still continues."

The panel physician is no longer free or independent. He is for all practical purposes an employee of the state, and sooner or later there is a reasonable certainty that a state medical service will be established to replace the present highly involved and costly administration of national health insurance. But once such a system comes into operation, it is practically hopeless to anticipate a return to the earlier status of a free and independent medical service.

(To be continued)

THE LURE OF MEDICAL HISTORY*

PHYSICAL MEDICINE—SOME HISTORICAL FACTS AND FIGURES†

By HAROLD M. F. BEHNEMAN, M. D.
San Francisco

JUST as our own life began in the generations preceding this, so did modern medicine. As one candle is lit from another, each generation, each century of medicine progresses in the conquest of disease and the preservation of health.

If we pause briefly, in retrospect, we realize that physical medicine, which is constantly knocking at the door of modern therapy, is no youngster but a very wise old man. Let us review some old familiar names, and perhaps some that are strange to us; let us see some pictures long forgotten as they have hung in the corridors of time—pioneers, prophets and martyrs in a field of therapy whose origin was with Creation.

Progress in medicine, unlike that in other sciences, has rested upon the shoulders of a few strong men in each generation; the mass of men have been a detriment rather than an aid. We move ahead so furiously fast, we have been so necessarily engrossed in the maze of laboratory sciences since the discovery of bacterial etiology of disease, that we are very apt to underestimate and discard our age-old methods of treatment, and so easily lose our memory of those pillars in the foundation of rational medicine. To the student of medical history this will be but a review; to a busy practitioner, I hope it may bring at least a glimpse of the history back of the oldest form of treatment known to man.

USE OF HEAT AND LIGHT

Ancient inscriptions of all sorts indicate that folkways of early medicine, regardless of their origin, have been the same. The use of heat dates back to remote antiquity. Even animals lie in the sun when ill. Massage was long known and practiced by the Indians, Chinese, Japanese, Hindus, and Malays; the manuscript, "Kong Fao" (3000 B. C.) contains accounts of various methods used. The Indian used the hot spring, the vapor bath, and cold plunge. The Ganges and the Nile are frequently referred to in history as the bathing places of ancient man. The Persians, Egyptians, and Phoenicians knew of massage, which was probably imported into Melanesia by Polynesian castaways, as their massage was truly rational and effective. The Indian's "Turkish" bath was the geyser, the warm spring and the sweat-oven. Let us consider these various forms of physical medicine separately; first, that of heliotherapy.

*A Twenty-Five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of CALIFORNIA AND WESTERN MEDICINE. The column is one of the regular features of the Miscellany Department of CALIFORNIA AND WESTERN MEDICINE, and its page number will be found on the front cover index.

† From the department of medicine, University of California.

† Presented at the American Congress of Physical Therapy, New York, September 5, 1932.

In Heliopolis, the Egyptian city of the sun, there were temples which served as centers of medical activity. Between 3000 and 1000 B. C. a distinctive culture was carried, by navigation and trade, from Egypt to the Mediterranean; and after the latter date by Phoenicians to India, to Melanesia, and to America. This culture had as its foundation the worship of the sun. Aesculapius, the son of Apollo and the god of medicine, became an immortal object of worship. The temples of his cult were like the health resorts of modern times.

Asclepiades depended upon light in conjunction with baths. Hippocrates was the first physician to use sun treatment. The Incas of Peru erected elaborate temples to the sun, which also held a superior place in the theocratical college of Ancient Egypt. The ancient Persians venerated the orb of day. Pliny said: "The sun is the greatest curative agent." The ancient Greeks exposed their ailing to its rays: Hippocrates, Celsus, and Galen supported its use. Aristotle said that the sun produced the green of vegetable matter. The Greeks worshiped Helios and Apollo, the Egyptians their Ra, the Israelites and Philistines their Baal, the Persians their Mithra, and the Germans their eye of Wotan. All through primitive and ancient medicine, we find papyri, manuscripts and friezes, as well as various other forms of art depicting the use or worship of the sun. Later on, the most celebrated Arabian physician, Avicenna (980-1037) recommended sun baths. John of Gaddesden (1280-1361) first used light about 1307, in the treatment of smallpox. Walter Harris in 1742 noted that clam shells, when ground up in the sun and used in treatment, cured or improved certain diseases we know now as lacking in calcium metabolism. Thus, two hundred years ago began the use of irradiated foods. Early in the nineteenth century, Ollier and Poncet wrote on the sun treatment of tubercular arthritis. In 1676, Roemer (1644-1710) discovered the velocity of light. In 1777 Karl Wilhelm Scheele (1742-1786) discovered rays which darkened silver chlorid. The German physician, Christopher Wilhelm Hufeland (1762-1836) recommended sunlight in scrofula. In 1801, Ritter discovered the ultra-violet rays. In the same year Sir Humphrey Davy (1778-1829) demonstrated the first carbon arc light. Isaac Newton (1642-1727) in 1666, by prisms, pointed out the various divisions of the visible spectrum. Theobald Palm in the late eighties spoke of rickets as "the shadow disease." Loebel, in 1815, designed a sun-bath cabinet. In 1857, Jean Martin Charcot (1825-1893) stated that sunburn was due to invisible rays of the sun, and in 1885 Unna proved them to be such. In 1814, J. von Fraunhofer (1787-1826) discovered the dark lines of the spectrum. William Herschel (1738-1822) revealed the infra-red rays. In 1897, Finsen (1860-1904) established his light institution. For the treatment of scrofula, Lugol (1788-1851) considered light essential. This was before the tubercular etiology was known. I can only mention famous characters in this early history such as Thomas Beddoes (1760-1808), Johann Wolfgang Dobereiner (1780-1849), and Bonnet (1802-1858). In 1889, Widmark proved ultra-violet rays caused erythema and pigmentation. Finsen was the first to establish, let alone to suggest, that all rays of the sun were not equally of value in treatment; he was certain that the ultra-violet rays were the most effective. In 1895, he started using sunlight for the treatment of lupus; he invented and constructed the first water-cooled ultra-violet machine thirty-seven years ago. Bie, with Finsen, showed that the bacteriological properties of light lay in the blue and ultra-violet rays. Finsen was the originator of artificial light in therapy, using the carbon arc and receiving the Nobel prize. Forty years before, however, one Arnold Rickli of Austria established a clinic and used the sunbath for treatment. In the eighteen-nineties, Hewitt patented a lamp with a mercury vapor arc, after Arons in 1892 had developed and evaluated the same type of lamp with the mercury arc through a vacuum. The open-air treatment of disease existed in Scotland in 1747. There was a seashore hospital at Margate in 1791. George Bodington (1799-1882) in 1840 anticipated modern views in the use of cold dry air in lung diseases. The first open-air sanitarium for tubercular patients was established in Waldenburg mountains by Brehmer in 1859. It still exists. Our own Trudeau was a pioneer in this field in this country, and Bernhard and Rollier in Switzerland. So much for the sun, "the Giver of Life."

HYDROTHERAPY, MASSAGE, AND EXERCISE

Turning now to hydrotherapy, massage, and exercise, we are confronted with volumes of historical knowledge and use. Hydrotherapy probably began with the licking of wounds by animals. In ancient records we find that the Hebrews attained the highest eminence among oriental peoples in hygiene and hydrotherapy; they may be said to have originated public hygiene. In the medieval medicine of Japan, when disease was said to be caused by divine influence or devils, there were two deities who presided over healing, and one of their chief forms of therapy was mineral baths. Massage was so predominant and useful that it was considered the duty of the blind to learn it as an occupation. A thousand years before Christ, medical men, quite apart from the priests, practiced gymnastics, bathing and anointing. Osler has said that Greek medicine had a triple relationship with science, gymnastics, and theology. Hydrotherapy was so successful that Thales of Miletus (639-546 B. C.) taught that water is the primary element from which all else is derived. Hippocrates, as we know, felt that open air, massage, and hydrotherapy were foundations of treatment. Asclepiades depended upon light, hydrotherapy, and massage. He introduced general water therapy, and no less than eighteen hundred public baths had been founded during the period 334 B. C. to 180 A. D. The baths of Caracalla and Diocletian had marvelous accommodations for 1600 to 3,000 persons. In realizing

as much as that of the barber-surgeons. The that the Roman baths existed over two thousand years ago, we must pay tribute to their remarkable achievement and architecture. There were hot rooms, warm rooms, exercise rooms, swimming tanks, and a cold room actually called then the "Frigidarium." The large baths admitted plenty of light and air to the bathing rooms. The Romans knew enough of the value of sunlight to have the bathing rooms built with one whole side or the roof capable of being opened. Profuse perspiration was induced in the hot rooms. Bathing, exercise, and massage was a part of the Roman's daily routine. Even in the farmhouses the air or sunroom (atrium) was retained.

You have heard of the famous ship of Aesculapius, built by Romans about 293 B. C. in the middle of the Tiber, where they fled during a pestilence. There a great temple was erected to their God of Medicine, and this now forms one of the most interesting ruins of Rome. The island was cut in the form of a huge ship, 900 feet long and 240 feet wide, perfect in every detail, even to a huge mast. There was a central temple, with smaller ones around it, where medicinal baths, massage, and exercise could be applied. Springs were so venerated in their efficacy that they were considered as holy. Vitruvius in 46 B. C. wrote some remarkable medical treatises.

In the medieval period the general practice of surgery was still in the hands of the bathkeepers, ablest Italian surgeon of the thirteenth century, Saliceto (1210-1277), specified wet compresses in skull injuries to prevent the admission of foul air. The early medical schools of Salerno and Montpellier had enormous bathing departments. In 1872, Mercuriali (1530-1606) wrote a famous treatise on medical gymnastics, which was illustrated. Homer refers to warm baths for fatigue and injuries. The first ancient public baths were probably established by the Lacedemonians, who were given the credit of having invented the hot air bath. Hippocrates attached great importance to water therapy, and in 460 B. C. employed it with friction and rubbing for the treatment of muscle spasm and disease of the joints. He recommended physical therapy in gout, pneumonia and rheumatism. Galen gave first place to water in the treatment of disease. The Romans practiced bathing in the Tiber after exercise, and their emperors vied with one another in constructing gymnasia and baths, known as "thermae." The chief ones were at Agrippa 21 B. C., Nero 65, Titus 81, Domitian 95, Commodus 185, Caracalla 217, Diocletian 302 A. D., and Constantine. The Ganges and the Nile are frequently referred to as the bathing places of ancient men. The bathing establishments of the Persians were handsomely equipped. In 525 A. D., Alexander of Tralles recommended the use of water. In 923, Rhazes and in 1036, Avicenna, two Arabian physicians, advocated the use of cold water in fevers and diarrhea. The Japanese used it in the treatment of mania, convulsions, and hysteria. In 1576, Paracelsus wrote on mineral baths. In 1555, Cardano wrote on the uses of water. In England in 1696 and 1702, Sir John Floyer and Dr. Baynard wrote "The History of Cold Bathing." It ran through six editions and was translated into German. In 1723, Niccolo Lanzini published "Right Methods of Using Cold Water in Fevers." In 1738, Hahn wrote "The Power and Effect of Cold Water," and the Hahn family were all prominent in this field. In 1753, V. Perez published a work on hydrotherapy. In 1761, F. Hoffman of England published an article on "The Nature and Properties of Water." In 1776, Wright published in the *London Medical Journal* his experiments with cold water and fevers. In 1829, in Grafenburg, the celebrated Priessnitz established a cold water cure, so successfully that the Austrian Government lent its patronage. In 1874, Schuller published his observations of thermic applications on the circulation. In 1892, Vinaj confirmed these observations; they laid the foundations for our present knowledge of the effects of cutaneous thermic applications upon the visceral circulation. In 1848, Fleury of France published his work describing the invention and use of the douche. In 1760, Tissot (1728-1797) recommended the cold bath in fever. In 1861, Brand of Stettin published the amazing results of his bath in the treatment of typhoid fever. The late Doctor Winternitz (1835-1917) of Vienna was probably the father of rational physical therapy and wrote on the central nervous and circulatory systems. In 1897, Doctor Currie published his findings in the use of water in fevers, and of salt water in typhoid. In 1804, Oertel advised water drinking, and with Priessnitz popularized hydrotherapy. In 1860, Jurgensen of Kiel stressed this important form of therapy. In 1870, Liebermeister employed cold water in typhoid, with striking results. The Bavarian pastor, Kneipp, furthered greatly rational hydrotherapy. The first in this country to do much in that field was Russell Trall (1844). Ernest Brand (1827-1897) used cold water in typhoid, and in the nineties the great Winternitz created a school of clinical hydrotherapy. All this was many years after Homer spoke of Penelope's use of the bath to allay the melancholy of her husband's absence, when Hercules was refreshed by Minerva at the springs of Thermopylae, when Ullysses advised his father to have warm baths in his old age, and Oribasius developed the theory of hydrotherapy. Let us not forget Plato and his use of water in various diseases, and also Aretaeus, who applied sulphur baths in skin lesions and was the first to advise keeping the head out of the steam bath. And last but not least, Galen, Celsus and Paulus of Aegina, who used baths in fevers and the Spartans who bathed by law. The history of Japanese medicine reveals their use for nearly a thousand years, and Nakagami published a treatise on the subject over three hundred years ago.

Attempts were made with the insane even in the eighteenth century in the field of hydrotherapy. Many such affected were sent to the mineral baths in Meyenberg and Pyrmont. In Germany, the barber was often a bath keeper (balneator); and perhaps no other country has been so famous for

her resorts of hydrotherapy even in modern times. In our own country it is interesting to note that Samuel Thomson (1769-1843) of New Hampshire, received a patent on January 23, 1823, on the use of steam to produce perspiration. In 1801, Dr. James Thacher of Plymouth wrote that massage and hydrotherapy were too much neglected. Oliver Wendell Holmes, surgeon and poet, lauded physical therapy in 1859, as did Doctor Garratt of Boston in 1867.

In the brief consideration of massage and exercise, our earliest record again is the ancient Chinese "Kong Fao," wherein the Chinese employed rubbing as a therapy measure. Aesculapius might be called the inventor of it, in disease. Herodikus in 500 B. C. used it systematically. Massage in German medicine was so valuable that shepherds, herdsmen, and smiths became renowned as masseurs. Metzger of Wiesbaden originally rated massage as a branch of therapy, using the stroking, rubbing, kneading and beating, and instituting the first intelligent and methodical use of massage. In the sixteenth century, Fabricius used physical therapy in stiff joints, and today we recognize this as essential in personal and public hygiene, as well as in preventive medicine.

EXERCISE

In the consideration of exercise or gymnastics, our first knowledge is of Herodikus of Selymbria (about 500 B. C.), who was the father of exercise and mechanotherapy. Hippocrates was also its advocate. Erasistratus (300-225 B. C.) wrote on gymnastics. He was followed by Asclepiades (about 100 B. C.), by Celsus, Thessalus (60 A. D.), Galen (130-200), Antyllus (550) Paul of Aegina (625-690), Rhazes (860-932), and Avicenna (980-1037), all of whom lived before the tenth century and wrote extensively on the value of gymnastics.

In 1569, Geronima Mercurialis wrote "De Arte Gymnastica," the best known work in the gymnastics of the ancients. He was followed by Timothy Bright, then by Thomas Sydenham (1624-1689), who wrote of the virtues of exercise. The father of our present rocking-horse was Quellmaltz (1735). A vibrating chair was used by Voltaire, while Chirac rode in a carriage on cobblestones. In 1704, Tissot published his "Gymnastic Medicinale." The first orthopedic book was published by Nicholas Andry (1741). In 1704, Hoffman wrote that exercise was the best medicine for the body. The teachings of John Hunter form the basis of our present methods of muscle training. Peter Henrik Ling (1776-1839) put exercise and massage on a scientific basis, but Jacques Matthieu Delpech was the first to use gymnastics to treat human deformities. John Shaw (1792-1828) introduced athletic exercises into surgery, and Zander (1857) devised the machine therapy for muscle groups.

HEAT

The subject of heat has, of course, been covered mostly in our discussions of exposure to the sun, the warmth of baths and of steam; but I must make mention of the interesting use of colored light, particularly red. The ancient Japanese used red hangings to reflect red light and its heat upon smallpox patients. In the light of modern science we know that an increase of blood supply to the skin by infra-red heat means increased drainage. This, in turn, does much to lessen the inflammation present in the pustules of smallpox and might well lessen the scars. The red light used by Finsen to prevent pitting in smallpox, therefore, was just the continuance of ancient folklore. Anglicus, Bernard, De Gordon, and John of Gaddesden had employed it successfully in the case of the son of Edward the Second of England. Edward the First was treated thus, being covered with scarlet blankets and red counterpane. In the reign of Queen Elizabeth, red curtains and red glasses about smallpox patients were prevalent. Children were clothed with scarlet curtains in the eighteenth century in France and Japan. An old Roumanian custom from time immemorial has been to cover smallpox patients with red cloths. In Tonkin, the patient was placed in an alcove. Svendsen proved that light could change a vesicle of smallpox into a pustule.

The advocates of dry heat were few in comparison to the advocates of moist heat. In 1840, Guyot published a treatise on hot air and heat for pain. In 1844, Chautard published an article on the use of dry heat in rheumatism, and in 1893, Tellerman on the use of dry heat in pain. Now when we mention the cautery, we think of electricity; but not so in the olden days, when it was burning by a hot iron. Early use was made of this means by Avicenna (980-1037), the celebrated Arabian already mentioned, physician-in-chief to the hospital of Bagdad who, in his "Canon Medicinae," insisted upon the substitution of the cautery for the knife. Albucasis of Cordova, another Arabian physician, flourished in the eleventh century and was the author of a notable résumé called the "Al-Tasrif." One whole volume deals with the use of the actual cautery, the special feature of Arabian surgery, and gives descriptions and figurations of the peculiar instruments used. In Germany, Brunschwig, in 1497, used the actual cautery to check hemorrhage in amputations. The name of the French surgeon, Ambroise Paré (1517-1590), is already familiar for his famous statement that "diseases not curable by irons are curable by fire," and his use of the cautery on the battlefield is well known. It is interesting to note, too, that he also introduced massage into orthopedic surgery. Guy de Chaliac (1300-1368) employed the actual cautery in the fungus variety or lesions, as well as in caries, anthrax, and others.

ELECTRICITY

And so the history of modern medicine evolves merely into the history of man, bringing us, last of all, to speak of electricity. You were probably aware of the early history of the subjects I have mentioned, but perhaps there is not in your minds a true realization of the age of electricity and its use upon humans. Probably the first realization of

electricity came in the use of the amber bead as a clutcher on the spindle of Phoenician women: the very term, you know, comes from the Greek "elektron," the word for amber. Centuries ago the women of Africa bathed their sick children in waters frequented by the electric eel and torpedo, and in the reign of Tiberius electricity was employed by Scribonius Largus in the treatment of gout and headache by means of the torpedo fish. Pliny and Dioscorides refer to the remedial powers of electricity. In 1772, John Walsh described electricity in the cartilaginous torpedo. About 600 B. C., Thales of Greece, chief of the seven sages, rubbed a piece of fossil resin and observed that the amber attracted bits of cloth and feathers. In the time of Emperor Tiberius a freedman stepped on a torpedo fish and was freed of gout; this treatment was then recommended by Dioscorides for headache, as well as by Galen and Paul of Aegina (625-690). Aetius (450) employed a magnet for gout, and Paracelsus (1493-1541) maintained that magnets had powers of therapy. William Gilbert (1540-1603) published in 1600, "De Magnete," and Gilbert, a physician to Queeen Elizabeth, can be called the father of clinical electricity; but Krueger (1715-1759) first used it as a curative agent in 1744. In 1621, Van Helmont (1557-1624) published "De Magnetica." In 1660, Von Guericke (1602-1686) constructed the first primitive static machine, and in 1709 Hanksbee improved it. Our own Benjamin Franklin (1706-1790) in 1749 established the electrical origin of lightning and used Leyden jars in the treatment of disease; while in 1753 Richman was killed repeating the kite experiment. In 1745, Krantzenstein (1723-1795) first used Leyden jars in Europe in treating disease, curing within a quarter of an hour a woman with a contracted finger. Jallabert was the first to produce muscle contraction by sparks (1712-1768), and in 1792 the famed Luigi Galvani (1737-1798) of Bologna discovered the electrical property of excised tissues of the frog, which was the starting point of modern work.

Following him, with great insight, was Alessandro Volta (1745-1827), professor at Pavia. His "Letters on Animal Electricity" gave us our first conception of electrolysis and the demonstration of tetanic contraction by successive electric stimulae. The static spark was first used in 1734, by Abbé Nollett.

The first static machine in London was installed in the Middlesex Hospital in 1767, St. Bartholomew's in 1777, and St. Thomas' in 1799; and an old print of that date hangs in St. Bartholomew's electrical department now, showing the administration of static electricity to a patient. Doctor Bird in 1836 became the first head of a hospital electrical department in England. The famous Purkinje (1787-1869) was a pioneer in galvanic stimulation. The German physiologist, E. H. Weber (1795-1878), discovered the action of the vagus nerve by electromagnetic currents. His brother, W. E. Weber (1804-1891), constructed one of the first electromagnetic telegraphs and used electricity in muscle movement. The famous religious reformer, John Wesley (1703-1791), in the 1760 edition of his book, "The Desideratum," on the treatment of disease, introduced electricity and stated: "It comes nearest a universal medicine of any yet known to the world." Thomas Addison (1793-1860) was the first to employ, in 1837, static electricity in the treatment of spasmodic and convulsive disease. In 1825, direct current was used in Europe. Our own S. Wier Mitchell used faradic current in striated muscle.

Michael Faraday (1791-1867), English physicist and chemist, wrote 158 scientific papers and one textbook, and his discoveries in electricity were many, particularly in magnetic induction. In 1767, the English clergyman and natural philosopher, Joseph Priestley (1733-1804) published his "History of Electricity." In 1773, the British surgeon, John Hunter (1728-1793) made known his observations on the torpedo; in 1793, Volta designed the first battery. In 1783, Marat put out a book on electricity and therapy. In 1825, Georg Simon Ohm (1787-1854) propounded his "Ohm's Law," and in 1841, Jonle (1818-1889) published his studies on electrolysis. In 1842, Reymond (1818-1896) became the founder of modern electrophysiology: he introduced, in 1849, faradic stimulation from a special induction coil, and was the first to describe and define electrotetanus—a truly great man.

In 1855, Duchesne (1806-1875) classified electrophysiology. He was the founder of electrotherapy and he employed induced current in the treatment of paralysis. Remak (1815-1865) substituted galvanic for the faradic current, and in 1855 demonstrated points of muscle stimulation on the human. Von Ziemssen (1829-1902) charted these motor points in 1857. Althouse (1831-1900) of London, in 1867 published the first systematic work on electrolysis; and in 1866 he removed a nevus. Michel, in 1875, removed hair by this method. In 1891, Tesla first suggested diathermy use, and in 1892 D'Arsonval introduced high-frequency currents, describing their action, while in 1893 Oudin demonstrated fulguration.

Carlo Matteucci (1811-1868) introduced the word "tetanize" in 1838, and first demonstrated that the muscle of a muscle-nerve preparation will contract if its nerve be laid across another contracting muscle. Adolf Fick (1829-1901) wrote two important works on medical physics and invented several new instruments. Hugo Kronecker (1839-1914), as long ago as 1871, distinguished himself for his physiology of muscle work with the use of electricity.

Erb suggested the method of electrodiagnosis by galvanic and induction currents, and followed Duchesne in the extensive development of electrotherapy. S. Weir Mitchell, one of the greatest neurologists of his time, introduced the use of electricity in the treatment of nervous disorders, combining it with rest, massage, and fresh air. Nicola Tesla first suggested the medical use of that form of electricity now known as high-frequency; Nagleschmidt gave it the name "diathermy," and Doyen first used it in surgery.

384 Post Street.

CLINICAL NOTES AND CASE REPORTS

OBSTRUCTION OF THE SUPERIOR VENA CAVA —BY CARCINOMA OF THE BRONCHUS

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AND
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INSTANCES of obstruction of the superior vena cava by primary carcinoma of the bronchus are not unknown. The infrequency of their occurrence, however, and the fact that the roentgen findings entirely masked the true nature of the disease, make the case to be reported worthy of record.

In most cases of carcinoma of the bronchus reported, the lesion has been situated below the hilus area in the main bronchus of the right lung. Involvement of the left main bronchus, and of the bronchi of the upper lobes, have also occurred frequently. Primary carcinoma, with substernal involvement of either right or left bronchus sufficiently massive to occlude the superior vena cava, is not common. In 1922 Dana and McIntosh gave a comprehensive review of all the literature on the subject of interference of circulation of the superior vena cava by primary carcinoma. They found twenty-three reports of obliteration of the superior vena cava by primary carcinoma of the lung, only six of which were verified as carcinoma, and fourteen reports of obliteration by primary carcinoma of the bronchus. In 1930, Brown reviewed the literature on this subject and added

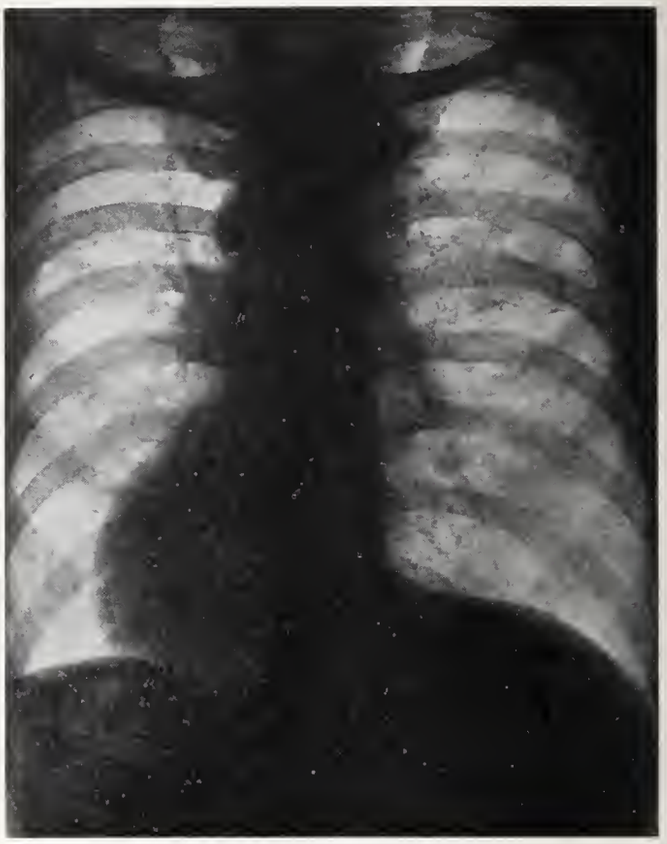

Fig. 1.—Film showing findings characteristic of all films taken during the two and one-half years preceding and up to five days before death. Left apical fibrosis, marked emphysema of right upper lobe with linear fibrosis of right middle lobe.

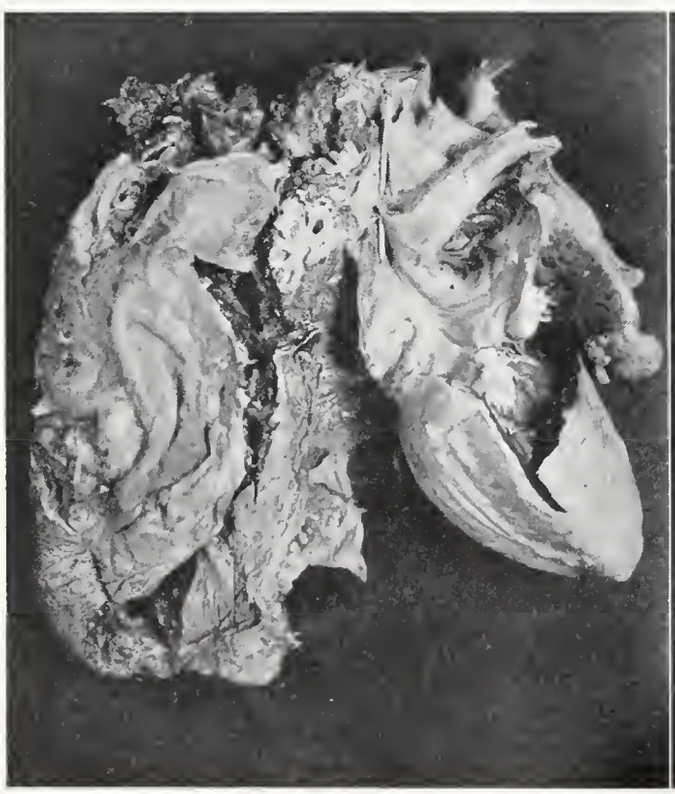

Fig. 2

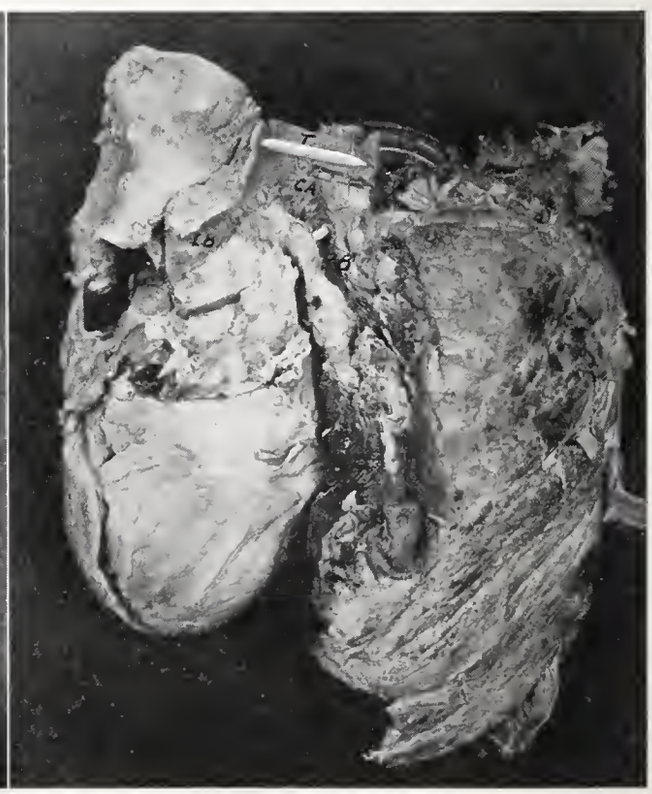

Fig. 3

Fig. 2.—Anterior view of right lung and heart. An applicator was forced through the obstructed lumen of the superior vena cava and is shown in position. Portions of the emphysematous areas of the right upper lung were torn because of adherence to the parietal pleura.

Fig. 3.—Posterior view of right lung and heart after removal from chest. *T*, trachea above bifurcation. *CA*, site of removal of section shown in figures 4 and 5. *RB*, right main bronchus partly occluded by new growth. *LB*, left main bronchus approximately normal in size.

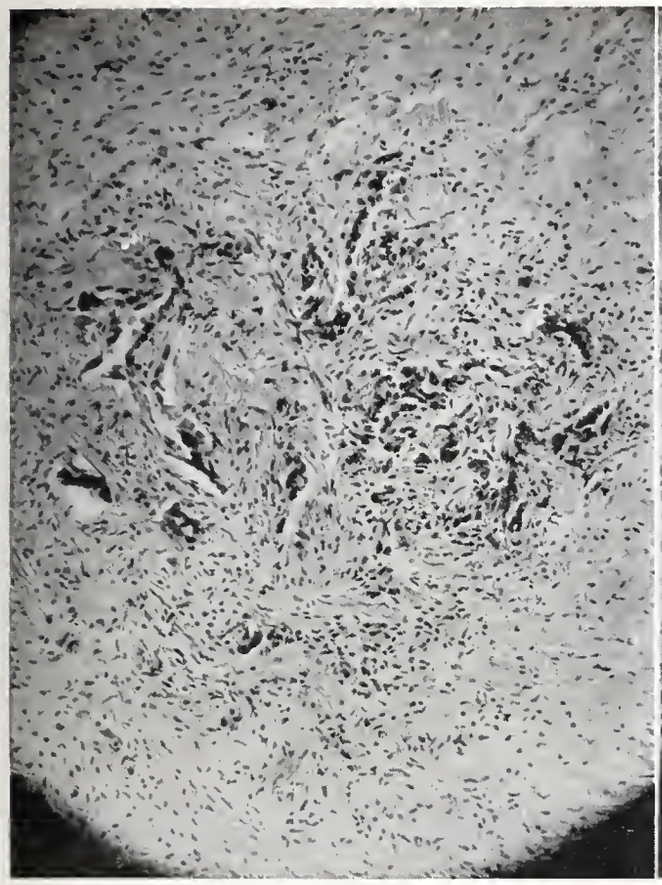

Fig. 4.—Sclerosing carcinoma surrounding vena cava.

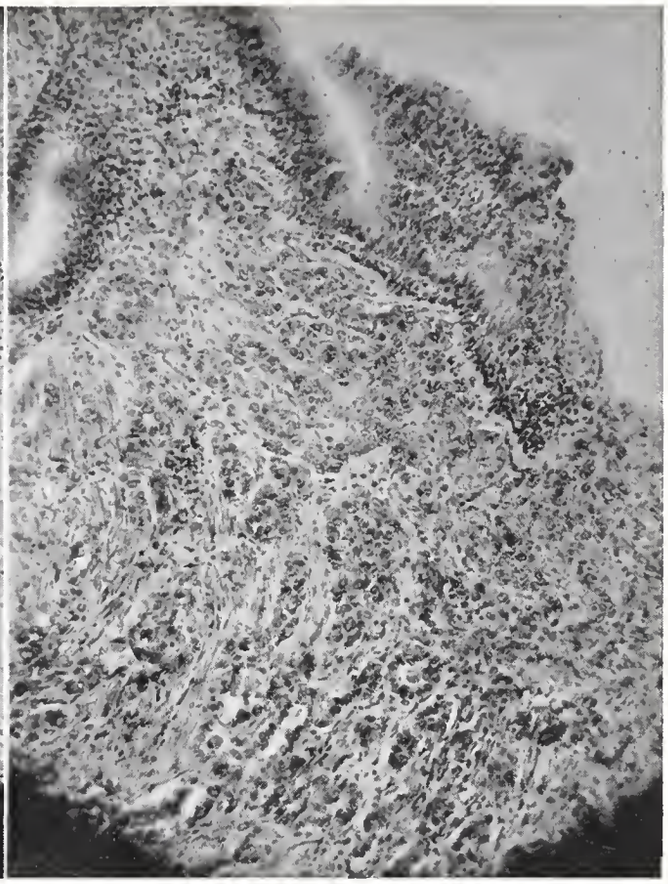

Fig. 5.—Carcinoma of right bronchus, showing attempt at alveolar formation.

one case of peribronchial carcinoma of the right upper lobe, which occluded the superior vena cava; making a total of thirty-eight reported cases. The following case report brings this total up to thirty-nine.

REPORT OF CASE

The patient was a man, forty-two years of age, who gave the following history. In 1925, following an acute attack of gall-bladder colic, a gangrenous gall-bladder filled with stones was removed. In January, 1931, he complained of stomach pain, dyspnea and cough, and a diagnosis of duodenal ulcer, confirmed by roentgen study, was made. The stomach pain was relieved by diet, but the cough and dyspnea, which were ascribed to a chronic bronchitis and bronchiectasis, did not lessen. In February, 1932, he complained of swelling of the face and neck, pain in the right side of the chest with inspiration, and dyspnea. At this time the temperature was 98.6, and the pulse 108. The veins of the right side of the neck were dilated, and the patient coughed continually. He did not stop work, however, and even won a golf club championship. In March of that year a tonsillectomy was performed, with no resultant improvement. In April, both arms and the chest wall became edematous, and the symptoms increased in severity. In May paralysis of the left vocal cord, with hoarseness, developed. By the middle of May the right axillary veins had become prominent, and subsequently the upper abdominal and inguinal veins on the right side became engorged. At this time the patient began to raise blood-streaked sputum, and bronchoscopic examination was advised but refused. Anorexia developed, together with marked dizziness and giddiness on stooping, or even with exertion. One dose of deep x-ray therapy over the superior mediastinum resulted in an increase of all symptoms.

The patient was first seen by us in the early part of December, 1932. His condition had improved somewhat with rest during the preceding two months, but he was complaining at that time of nausea, vomiting, anorexia and blood-tinged sputum, right mid-chest pain, dyspnea, and hoarseness. Physical examination revealed paralysis of the left vocal cord; increased sounds at the right apex of the chest, but no typical râles; edema of the supraclavicular area; and marked collateral circulation over the entire chest and abdomen down to the inguinal region.

Roentgen examination of the chest showed marked emphysema of the right upper lobe, with evidence of a linear fibrosis along the interlobar septum of the inner upper right lobe. (See Fig. 1.)

All symptoms increased in severity during the month following our first examination, especially those referable to the stomach. Because of these gastric symptoms, a partial obstruction of the duodenum was suspected; but roentgen examination of the gastrointestinal tract showed no evidence of it. Analysis of the gastric contents revealed the absence of free hydrochloric acid. Bronchoscopic examination was again advised, but refused. During the first week of January, marked congestion of the right mid-chest developed, with raising of considerable sputum, one specimen of which was reported as positive for acid-fast bacilli.

Because of the duration of symptoms over a period of two years, the pleurisy which accompanied their onset, the evidence of fibrosis in the left apex, the presence of acid-fast bacilli in the sputum and the increase of symptoms under roentgen therapy, we felt that we were dealing with an inflammatory lesion, probably a tuberculous mediastinitis, with obliteration of the superior vena cava and obstructive emphysema of the right upper lobe of the lung.

The patient died on January 12, 1933. Clinical and roentgen evidence of death was massive consolidation of the right middle lobe, in the region of the previous fibrosis. Postmortem examination revealed a carcinoma of the trachea. The lesion was located at the bifurcation of the trachea, and extended into the right bronchus and into the right hilus area, occluding the superior vena cava.

Postmortem Findings.—The report of the postmortem examination, performed by Dr. H. S. Sumerlin, was as follows:

"External examination showed numerous dilated veins in the skin over the thorax and abdomen; one

on either side extended down to the external inguinal ring. There was a palpable lymph node in both axillae.

"The heart and lungs were removed *en bloc*.

"The right pleural cavity contained more than a liter of clear yellowish fluid with masses of jelly-like fibrin. The right upper lobe was firmly adherent to the parietal pleura, and the left lung was adherent on all surfaces. The posterior mediastinum and right hilus areas were involved with a growth of very firm white tissue. The superior vena cava was completely occluded by pressure of the surrounding growth, which was about one centimeter thick at this point. The lumen of the vena cava was apparently not invaded. There was ulceration of the mucosa at the bifurcation of the trachea and extending down into the right bronchus. At this point the trachea and bronchi were surrounded by the growth, and at the bifurcation there was a mass three centimeters in thickness which was continuous with the wall of the right bronchus. The lumen of the right bronchus was about half the diameter of the left.

"The upper half of the right upper lobe was the site of an extensive multilocular emphysematous cavity. The lower portion of the lung was compressed, contained little air, and was bronchiectatic. Many of the dilated bronchi were filled with purulent material. The consistency of the lung was that of a chronic interstitial pneumonitis. The left lung showed no changes. The heart was normal except for a mural thrombus in the right auricle. The aorta showed moderate sclerotic changes.

"The organs of the abdomen and pelvis showed no gross pathology.

"Microscopic examination: The section from the white fibrous tissue showed sclerosing carcinoma. In the trachea and bronchus the growth was most marked in the submucosa and, except for a few areas of ulceration, was covered by intact mucous lining. The majority of the cells were large, vesicular and undifferentiated, but a few areas were seen in which there was definite attempt at alveolar formation. This strongly suggests origin from the mucous glands. The lumen of the vena cava was not penetrated. The right lung showed bronchopneumonia, chronic bronchitis, and fibrosis.

"Pathological diagnosis: Primary sclerosing mucous gland carcinoma at the bifurcation of the trachea and in the right bronchus, occluding the superior vena cava and extending into the right hilus area; serofibrinous pleurisy; emphysema; bronchiectasis; bronchopneumonia; chronic interstitial pneumonitis of right lung; establishment of collateral circulation by the veins of the skin and deeper tissues of the thorax and abdomen."

COMMENT

The point of special interest in the case reported is, as stated earlier in the paper, the complete lack of evidence on the x-ray films of the true nature of the disease. Roentgen examination of the chest was made at regular intervals throughout the two years of the patient's illness. All films showed progressive emphysema of the right upper lobe, and fibrosis of the middle lobe on the same side. No infiltration or mass, suggestive of tumor tissue, was evident at any time. The emphysema was probably interpreted as obstructive in type, and the fibrosis was considered inflammatory, possibly bronchiectatic in origin. The condition producing the constriction of the vena cava, and the secondary changes in the lung, was considered tuberculous in character because of the pleurisy accompanying its onset and the acid-fast bacilli found in the sputum on one occasion. However, no active tuberculous lesion was found at autopsy.

We believe that a bronchoscopic examination would have revealed the presence of the new growth, and that had the patient permitted this procedure the correct diagnosis could have been made at least one year before death occurred.

IN CONCLUSION

A case of carcinoma of the bronchus obstructing the superior vena cava, in which the true condition was not discovered before death, is reported. Repeated x-ray films of the chest throughout the course of the illness failed to reveal any evidence of new growth.

2001 Fourth Avenue.

LYMPHOGRANULOMA INGUINALE

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AND
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Lymphogranuloma inguinale, also known as Nicholas-Favre disease, or as the "fourth venereal disease," is a specific entity which was formerly thought to be limited to the tropics. In recent years many cases have been reported from Europe, and very recently a number in the United States, especially by Wolf of Cleveland, Ohio.

It is not the purpose of this paper to repeat the excellent clinical descriptions which can be found in Wolf's articles. However, we would like to briefly review them. The disease is essentially venereal, being acquired by intercourse with an infected partner. About one or two weeks after exposure, a small, fleeting sore develops on the genitalia. This is often so insignificant as to escape attention. Four to six weeks after the exposure the glands draining the area primarily inoculated become involved. They swell, become painful, suppurate and break down. From this point on they usually persist for months or even years as discharging sinuses. When the inguinal glands are involved, as is usually the case in males, the picture is similar to the broken-down discharging glands of a chancroidal infection. In women, two somewhat different and rather characteristic pictures are seen. The one consists of hard edematous hypertrophy of the labia, often with ulceration and sinus formation. This is due to lymphatic blockage caused by destruction of the inguinal glands (or to retrograde infection?) and is probably the same condition which was formerly known as esthiomene. The other syndrome occurs when the primary infection appears in portions of the female genital tract which drain into the anorectal lymphatics. In these cases, anorectal fibrosis, strictures, ulcerations, and draining sinuses are seen. This condition is probably analogous to that which was formerly erroneously known as "anorectal syphiloma of Fournier."

The causative organism has not been isolated, but the disease has been reproduced by inoculation. The pathology, as seen in a gland which has not completely broken down, is rather characteristic—the gland is studded with multiple miliary

Fig. 1.—Lymphogranuloma inguinale: ulcer.

abscesses having epitheloid cells arranged around them in a radiating palisade fashion.

Although the clinical picture is quite suggestive, a positive diagnosis cannot be made without the aid of the laboratory. Syphilis and chancroid must be ruled out. Although examination of an excised gland is helpful, most cases are diagnosed by means of the Frei test. This test consists of the intradermal injection of a small amount of diluted sterilized pus which has been aspirated from the gland of a proved case. The reaction is read forty-eight hours after injection, and is interpreted in the manner of any intradermal test. The positive reaction measures from 5 millimeters to 2 centimeters in diameter, and consists of erythema with some induration.

Treatment has been very unsatisfactory. Various chemotherapeutic agents, such as antimony compounds, have been tried. One of the latest treatments consists of an attempt at immunization by repeated injections of the Frei antigen.

The following case is reported because it is one of the earliest in California, and because the patient has never been out of the United States.

REPORT OF CASE

W. S., age forty-eight, white male, in 1927 was referred to one of us by Doctor Guerra of Alameda for treatment because of an ulceration on the tibial crest. He gave a history of a genital lesion twenty years previously, and a positive Wassermann reaction. A roentgenologist reported typical luetic periostitis. The ulceration healed rapidly under treatment with bismuth and arsphenamin. The patient disappeared from treatment and was not seen by us until 1931, when he returned because of an extensive ulceration around the anus plus a fibrotic annular stricture two inches above the anus. This was thought to be syphilis, and bismuth and neoarsphenamin therapy was instituted. No improvement followed until iodids in massive doses were given, after which the lesion healed in three months' time. The patient again stopped treatment, without permission, for three months, and suffered from a relapse of the ulceration. This healed a second time, following the ingestion of huge doses of iodids by mouth; only to relapse this last time about October 1, 1933 (Fig. 1). Prior to this relapse he had returned to one of us because of an almost complete obstruction from the annular stricture, and a posterior midline complete direct fistula in ano. The stricture was divulsed after cutting it with a cautery, and the fistulous tract was opened with the cautery. Following these operations the stricture was gradually dilated and diathermy was used twice a week. A Frei test was strongly positive. We felt, therefore, that we were dealing with a case of lymphogranuloma inguinale.

Because of the knowledge of a preëxisting syphilis, the patient was given bismuth injections at weekly intervals, as well as two drachms of the saturated solution of potassium iodid three times daily. Injections of the Frei antigen have been given intradermally once a week. Each injection has produced an enormous positive reaction of one to two centimeters. Under such polytherapy, the patient has progressed to complete healing.

SUMMARY

One of the early cases of lymphogranuloma inguinale seen in California, showing a positive Frei reaction, is reported herein.

3115 Webster Street.
450 Sutter Street.

USE OF TONGUE BLADES

By Herbert J. Samuels, M. D.
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IT is suggested, in making a mouth examination, to lubricate the tip of the wooden tongue-blade that is placed against the patient's lips, tongue or cheek, thus preventing the mucous membrane from adhering to the blade, which generally occurs when used dry, much to the discomfort and distress of the patient. The tip of the wooden blade should be dipped in mineral oil, or some bland ointment may be applied to it with an applicator or piece of gauze, before being placed against the tissues. This simple procedure permits the blade to be applied and turned against the tissues easily and without injury.

1319 Central Bank Building.

PROJECTION OF MICROSCOPIC SLIDES—FOR DEMONSTRATION OR PHOTOGRAPHY

By Francis Senter Bascom, M. D.
Oakland

A METHOD for projecting microscope slides on a screen is here given for use in circumstances where a projecting microscope is not available, or cost prohibits its purchase.

By a simple rearrangement of the optical system of a standard microscope aligned with a "home movie" projector as the source of light, a clear projection may be obtained on a screen at any distance up to about thirty feet from the microscope or farther, depending on the power of the projection lens with which the projector is equipped.

The arrangement of the improvised projection microscope is as follows: Remove the eye-piece (A) and its reducing ring (B) from the draw tube. Unscrew the ring (D), which grips the draw tube, and remove it and the tube, then unscrew the flange (C), leaving the draw tube with-

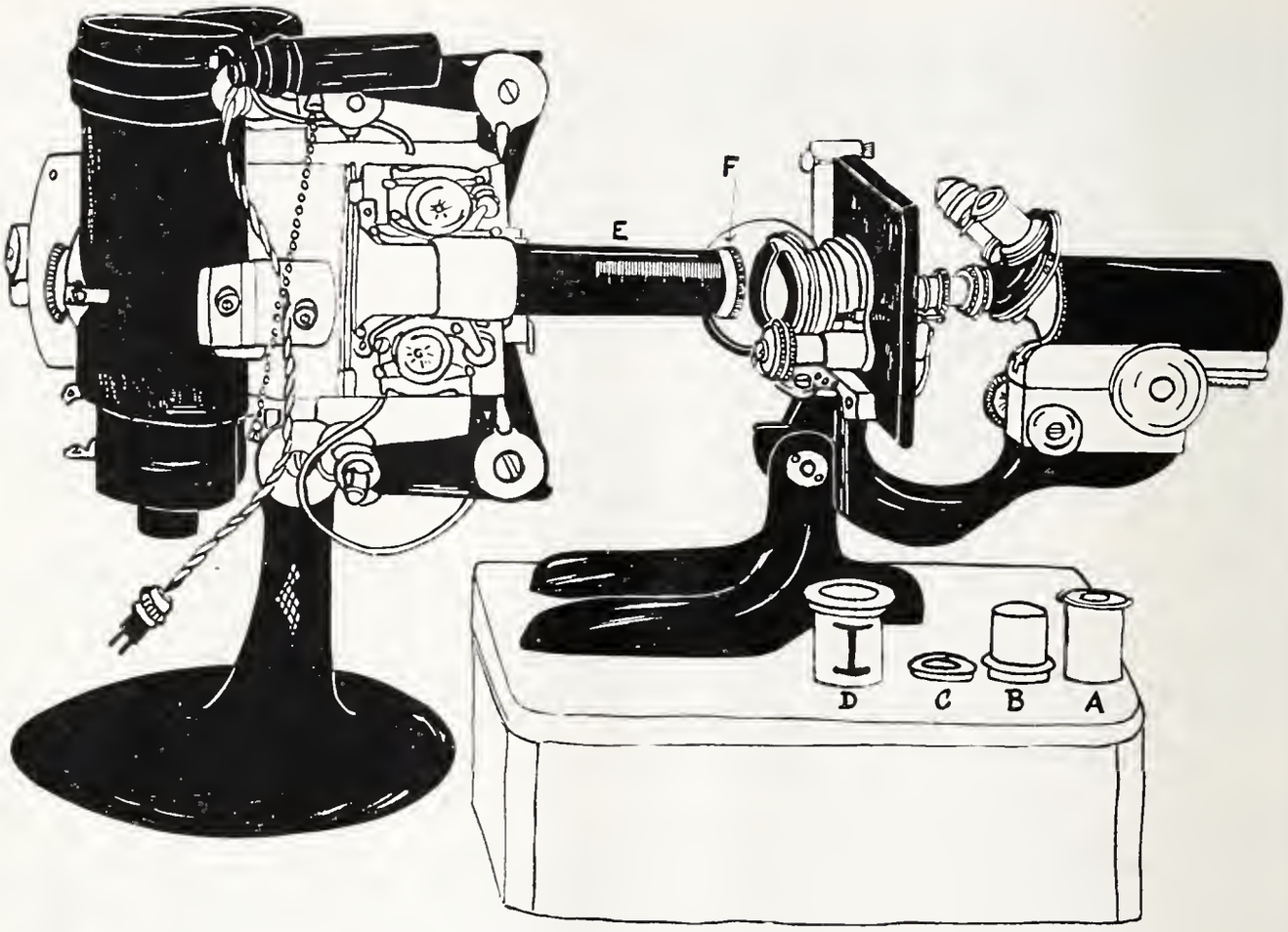

Fig. 1.—Showing rearrangement of microscope for projection of microscopic slides

out any attachments. Insert the projector lens (F) in the draw tube and mount this combination in place of the lens in the projector. (This may be done with a simple strip of tin bent into the form of a cylinder to fit inside the draw tube of the microscope and the projector lens opening.) Swing the barrel of the microscope into the horizontal position and carefully align barrel, condenser, and draw tube by standing the microscope on a box or any firm support of appropriate height. The projection lens should be an inch or less behind the condenser of the microscope, and exactly in line.

The home movie projector condensers should be in place. As the better models are equipped with the fan cooling device to protect the film in projection, the microscopic preparation is thus protected, as well as by its distance from the filament. (In such projector models as have a perforated safety screen, this screen should be raised after the microscopic preparation is in place by pressing the appropriate trigger on the projector.)

400 Twenty-ninth Street.

SUBUNGUAL EXOSTOSIS OF THE BIG TOE

By A. Gottlieb, M. D.
Los Angeles

THIS rather common condition under the big toe-nail is only casually mentioned in the textbook of surgery or orthopedics. The unfamiliarity with this type of exostosis leads one to regard it as an atypical form of ingrown nail; or it is wrongfully diagnosed as a malignant growth, or is mistaken for granuloma pyogenicum, an infectious dactilitis, or for a cartilaginous or fibrous tumor.

The subungual exostosis is, without exception, of traumatic origin. In most instances the patient will recall an injury to the toe while dancing, or stubbing it against some hard substance. In a limited number of instances, short shoes and continuous irritation of the end of the phalanx may be regarded as the causative agent. The fact that not all cases of injury or short-shoe wearing lead to the formation of this growth speaks for either a predisposition to exostosis or suggests the requirement of a sufficient force to produce such bone proliferation. Younger people and the female sex are more prone to develop this growth, possibly because of growing bone in the former and ill-fitting shoes in the latter. It usually occurs unilaterally, and has its location on the inner half of the tone-nail; less frequently it is encountered in the center of the distal phalanx. The clinical picture varies with the length of the duration of the exostosis. Pain is the predominating symptom. It may develop gradually with the growth of the mass; or may come on rather suddenly after an acute injury to the toe.

In appearance the exostosis is a pinkish growth which protrudes through the nail, pushing it upward. It may have the size of a millet seed, or it may become as large as a hazel nut. The mass is usually smooth. Only in later stages may it have a cornified appearance or even be ulcerated. The nail becomes thinned and brittle, and eventu-

ally disappears entirely, leaving the tumor exposed to view.

The x-ray appearance of the exostosis is characteristic. The film shows a bony growth protruding from the end of the phalanx. The size appears smaller in the x-ray than in reality, because the mass is not fully ossified and does not throw the complete shadow picture. The base of the mass may still be cartilaginous and the top covered with fibrous tissue. The x-ray should be resorted to in all cases of persistent pain and tenderness of the distal phalanx, especially if the nail is raised from its bed. Any existing doubt as to the diagnosis will thus be cleared up.

The subungual exostosis is essentially benign, and will not recur after being thoroughly removed, when its matricular substance has been completely destroyed.

727 West Seventh Street.

SAFEGUARDED NEEDLE FOR HEMORRHOIDAL INJECTIONS

By Frank M. Mikels, M. D.
Los Angeles

THE injection method of treating hemorrhoids is now well established as an ethical and conservative therapeutic procedure.

Various chemical compounds have been used, the most common among them being phenol solutions and the aqueous solutions of quinin and urea hydrochlorid.

In simplifying the technique for the injection method of treating internal hemorrhoids, four essential procedures are necessary: (1) easy presentation of the hemorrhoidal mass; (2) adequate asepsis at the point of puncture; (3) the least possible traumatization of the mucosa at the point of introduction of the needle, with a definite stop to prevent too deep introduction of the needle; (4) and a chemical preparation which will give the quickest and most permanent reactionary effect, with complete reduction of the hemorrhoidal mass without sloughing.

The internal hemorrhoidal mass can be easily presented for inspection and treatment with Hirshman's anascope, exposing a quadrant of the lower rectal zone with the hemorrhoid in view, if one is present. The anascope can be easily rotated to present that region of the lower rectum having the hemorrhoidal mass, so that the mass bulges into the lumen of the anascope over the proximal edge of the oblique aperture in good position for the injection.

In order to obtain an aseptic field for the introduction of the needle, it is best to have the usual cleansing enema prior to the examination; and then, just preceding the introduction of the needle, the hemorrhoidal mass should be thoroughly swabbed with cresitin, or some other local antiseptic solution, and a definite application of a stronger antiseptic solution made at the point of puncture.

In order to cause the least traumatization of the mucosa which already has been more or less abraded and eroded, especially where there has been frequent bleeding from the hemorrhoid, a very small needle should be used, not over a 25 gauge. To avoid thrusting the needle too far into the hemorrhoidal mass, a safety-stop needle, similar to the illustration (Fig. 1), should be used.

Fig. 1.—A Safeguarded Needle for Hemorrhoidal Injection.

This needle has a metal bead welded to the shaft, one-fourth, three-eighths, or one-half inch from its end. The length of the needle should be at least one and one-half inches long. The aperture of the needle should be very obliquely beveled.

The needle should be plunged through the mucosa in a diagonal manner, prior to the injection of the sclerosing solution.

The point of injection of the hemorrhoid depends a great deal upon the size, extent and structural condition of the mass. The amount of solution to be injected also depends upon these factors. Five to ten minims of the 4 per cent aqueous solution of quinin hydrochlorid is usually sufficient to produce the necessary reaction to obliterate the hemorrhoidal mass. The best reactionary effect seems to be a sclerosis of the mucosa and submucosa, causing an indurated mass which gradually becomes absorbed and obliterated.

Immediate compression of the hemorrhoidal mass for about ten minutes with a firm, large cotton applicator, after the needle has been withdrawn, will diminish the amount and extent of the reactionary induration without interfering with the end-result. After the induration is absorbed, the rectal mucosa has a firm and elastic consistency, and is firmly adherent to the muscular coat.

The abnormal distention of the hemorrhoidal veins, arterioles and the venous lakes in the submucosa become completely reduced following this technique, and the induration becomes absorbed. Protrusion and ectropion of any residual hemorrhoidal mass is permanently prevented by the plastic infiltration which takes place between the mucous and muscular coats above the pectinate line.

7022 Sunset Boulevard.

The Way He Walks.—I need not describe to you in detail here the stamping, broad-based action of tabes dorsalis; the steppage, drop-foot gait of peripheral neuritis; the dragging spastic gait of the paraplegic and the hemiplegic; the festinant trot of the paralysis agitans; or the stiffening shuffle of old age. Their enumeration, however, brings me to the question of how we may best train our eyes to do better as time goes by. I would first of all tell you simply to make a rule of having a good look at every patient as he walks into your presence or sits or stands or lies before you. To avoid embarrassment ask a question or two by all means, but study him well meanwhile. The art of medicine is largely the art of noticing. You need to cultivate constantly both the enthusiasm and the watchful patience of the field naturalist if you wish to obtain the full value and interest which clinical work can bring.—Ryle, J. A.: The Training and Use of the Senses in Clinical Work, *Guy's Hospital Gazette*, 47:421 (Oct. 28), 1933.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

AMEBIASIS

ETIOLOGY

JOHN F. KESSEL, PH.D. (University of Southern California, Los Angeles).—The term "amebiasis" is used to imply a state of infection with Endameba histolytica, which protozoön is the recognized pathogen of intestinal amebae. Occasional reference is made to the pathogenic rôle of species of intestinal amebae other than E. histolytica, but affirmative data on this point are lacking and, until convincing proof can be obtained, all other intestinal amebae must be regarded as commensals. Individuals who harbor E. histolytica in the intestinal tract do not all experience clinical symptoms, any more than do all persons who harbor Corynebacterium diphtheriæ suffer from diphtheria.

Since E. histolytica is a facultative parasite, one finds three conditions resulting from its presence in the bowel: first, the acute ulceration or amebic dysentery; second, chronic amebiasis; and third, the "carrier" condition.

In a recent study involving some two hundred cases positive for E. histolytica in the Los Angeles County General Hospital, 21 per cent showed symptoms of acute amebic dysentery; 60 per cent were diagnosed as suffering from chronic ulcerative conditions, and 19 per cent exhibited no subjective symptoms, and might be classed as "carriers." Ten per cent of the cases in this series showed amebic liver abscess.

It is a question of considerable doubt as to just what factors are responsible for these differences in pathogenicity. Several explanations have been given. (1) Brumpt [1] feels that there are marked differences in virulence, these being so great that he names two species, E. dysenteriæ, which he considers to be pathogenic, and E. dispar, morphologically identical but which he thinks is nonpathogenic. (2) Other investigators claim that all races of E. histolytica are a potential danger, and that the resistance of the host is the major factor in determining invasiveness. (3) Other writers attach a great deal of significance to the factor of climate, claiming that a tropical climate, with its higher temperature and marked humidity, is primarily responsible for acute exacerbations of amebic infection.

Kessel [2] was able to produce pathology in kittens inoculated with amebae, both from "carrier" cases and from cases showing acute amebic dysentery, and feels that a person who shows cysts in his stools, even without giving evidence of clinical symptoms, may be a source of danger. Recently Cleveland [3] and Meleney [4] have demonstrated a variation in virulence of different races of E. histolytica, judged by their effect in kittens. They have not shown, however, that E. histolytica from carriers is non-pathogenic to kittens when inoculated into the intestinal tract, nor that E. histolytica from carriers is always less pathogenic than are amebae from acute cases. Meleney's Strain B 3, from a carrier, produced greater pathogenicity in kittens than his Strains A 2 and B 1, which were from acute cases.

Summarizing from these opinions, it is safe to assume that host resistance, racial variation of the amebae and climate are all factors in determining the degree of pathogenicity produced by E. histolytica.

Rapidity of Spread. — Amebiasis may be dedescribed as endemic in character. It seldom, if ever, assumes the proportions of a widespread epidemic. The Chicago outbreak illustrates the fact that amebiasis is less easily transmitted than bacterial diseases. For the number of persons presumably exposed, only a very few have developed the disease. One shudders to estimate the proportions that the epidemic might have assumed had the food handlers in question been carriers of bacillary dysentery rather than of amebic dysentery. Without doubt the epidemics of tropical dysentery that were described in the earlier literature were bacillary rather than amebic in character.

This self-limitation of amebiasis is due mainly to two facts: (1) the incubation period is often long, varying from one to several weeks, and (2) persons suffering from acute amebiasis, and who are passing trophozoites, are not so likely to transmit the infection, since trophozoites are not as resistant as cysts to the destructive processes of the upper gastro-intestinal tract. It is the "carrier," or the case with chronic amebiasis, that is the greatest source of danger in spreading amebic infection.

Transmission.—Amebiasis may be transmitted through several channels:

1. Animal reservoir hosts. Rats, mice, dogs, the domestic pig and monkeys have all been shown to harbor strains of Entameba histolytica, which will produce pathology in kittens. These animals may occasionally serve as sources of infection to man.

2. Insect vectors. Notable among the insects which may transmit amebiasis is the house fly.

[1] Brumpt, E.: Individualité de l'Entameba dispar. Présentation de pièces, Ext. Bull. Soc. Path. exot. 19:399, 1926.

[2] Kessel, John F.: Amebiasis in kittens infected with amebae from acute and "carrier" human cases and with the tetranucleate amebae of the monkey and the pig, Am. J. Hyg., 8:311, 1928.

[3] Cleveland, L. R., and Sanders, Elizabeth P.: The virulence of a pure line and several strains of Entameba histolytica for the liver of cats and the relation of bacteria, cultivation, and liver passage to virulence, Am. J. Hyg., 12:569, 1930.

[4] Meleney, Henry E., and Frye, William W.: Studies of Entameba histolytica and other intestinal protozoa in Tennessee: V. A comparison of five strains of E. histolytica with reference to their pathogenicity for kittens, Am. J. Hyg., 17:637, 1933.

This may be accomplished mechanicaly, or the fly also has been shown to ingest and to harbor cysts of E. histolytica for some hours, which were recovered later in a viable state. In regions where sanitation is poor, and the house fly ingests fecal material containing cysts, it is undoubtedly a means of spreading amebic infection.

3. Night soil as fertilizer. In the Orient, where human feces are used extensively for fertilizer, such material is a source of danger in the spread of all diseases disseminated through the gastro-intestinal tract. In the United States, however, where untreated sewage is not commonly used for fertilizer, this danger is minimal.

4. Water supplies. If cysts of amebae gain access to water reservoirs or supplies, they may remain viable at least for a period of thirty days. The chlorination processes that would ordinarily destroy vegetative bacteria are insufficient to kill cysts of E. histolytica. All contamination of water supplies by fecal material, therefore, possesses possibilities as a means of spreading E. histolytica.

5. The human carrier. In cities and regions where human excrement is disposed of by adequate sewage systems, there is little danger of transmission of amebiasis excepting by the human carrier. Here the food handler, whether in the private home or the public restaurant, is the source of greatest danger. This fact has frequently been emphasized in the past, and has recently been impressed upon us by the painful Chicago experience, which already has become and will remain a classic in the history of amebiasis.

This catastrophe points out plainly the necessity of routine examination of food handlers, not only for E. histolytica, but for other pathogenic microorganisms found in human feces, and the removal of these carriers from such duties.

Another point which is being illustrated by the aftermath of the above-mentioned episode, and one which has often been emphasized by workers in the field of amebiasis, is the frequency with which familial infections occur.

Incidence.—The incidence of amebiasis in California as compared with the incidence of infection in other regions is of special interest. There are no extensive surveys which give the incidence in our general population. With the exception of certain special groups of students who perhaps do not represent the population at large, Kofoid's [5] statistics, which give a percentage of 13.1, are for the most part from cases who have been suspected of exhibiting intestinal symptoms. The same fact applies to the various sets of hospital statistics compiled by the author and by others within the state. These may be either higher than the population at large, if they represent a series of cases suffering from chronic colitis suspected of being amebic in character, or they may be too low if they represent a series of cases of acute dysentery examined in a region where bacillary dysentery is common, *e. g.*, in the Los Angeles County General Hospital, where we average twenty cases of bacillary dysentery to one of amebic dysentery; and yet stools from all cases of dysentery are examined both for intestinal protozoa and for dysenteric bacteria. Our present percentage of incidence of amebiasis is approximately 3.5 as compared with an original percentage of 9.8, when fewer cases of bacillary dysentery were included in our examinations. The recent survey of Johnstone *et al.* [6] on a group of one thousand inmates of San Quentin Prison, in which an incidence of 9.2 per cent was found, represents an institutional group. Institutional statistics of communicable diseases are not always representative of a population at large, since the factors of personal hygiene and crowding may alter the incidence.

Further, there is undoubtedly a marked variation in the incidence of amebiasis within various subgroups of the population. One would expect a Mexican or a rural population, whose sanitary habits are not always identical with an urban population, to show different percentages of amebic infestation. In the Los Angeles County General Hospital, where the Mexican patients comprise less than 20 per cent of the hospital population, 43 per cent of the cases of amebiasis have been encountered among Mexicans.

A conservative estimate, based on a comparison of local figures with the surveys mentioned above, would yield an average incidence of amebiasis infestation in California ranging between 5 and 8 per cent. This percentage, compared with recent sets of figures from rural districts of various of the Southern States, is rather low. Urban and hospital statistics from the Southern States are lower than results from these restricted rural areas. Our figure, however, compares favorably with original estimates by Boeck and Stiles,[7] for the United States as a whole and with other more recent surveys in the north and eastern part of the United States.

In conclusion, it may be stated that amebiasis is a disease which is endemic among us, but on account of its natural slowness of transmission and of our modern methods of sewage disposal, it is likely that it will only rarely gain epidemic proportions. It is, nevertheless, an important problem (1) to the clinician who frequently encounters cases of amebic infection and who should be on the alert to accurately diagnose the same, and (2) to the public health official who is responsible for the control of the disease. It would seem that the examination of food handlers and the removal of "carriers" should be his chief objective.

* * *

DIAGNOSIS

Rawson J. Pickard, M. D. (520 E Street, San Diego).—The diagnosis of an amebic infection is a laboratory diagnosis, to be made in the labora-

[5] Kofoid, C. A.: Statistical summary of persons examined for protozoa in California, State Board of Health Twenty-ninth Biennial Report, Sacramento, Calif., California State Printing Office, p. 93, 1926.

[6] Johnstone, H. G.; David, N. A., and Reed, A. C.: A protozoal survey of one thousand prisoners. With clinical data on ninety-two cases of amebiasis, J. A. M. A., 100:728, 1933.

[7] Boeck, W. C., and Stiles, C. W.: Studies on various intestinal parasites (especially amebae) of man, Bull. No. 133, Hyg. Lab., Washington, 16:202, 1923.

tory of a pathologist who is interested in and a student of parasitology.

The symptoms that call for an examination of the feces for the presence of intestinal protozoa are varied; many symptoms are toxic or allergic, but there is always a history of abdominal disturbance. In general, it may be said that a stool examination should be made, competently, whenever with abdominal disease the diagnosis is not a certain one of an illness distinctly not parasitic. This precaution would save a few patients from unnecessary operations on the gall-bladder and appendix, and many others from a long delay in receiving specific treatment.

Acute dysentery, with mucopurulent or bloody frequent stools with tenesmus, is oftener bacterial than protozoan even in the tropics. Amebic dysentery has a gradual onset, does not occur in epidemics, and the temperature is not high (uncomplicated). Ravaut warns as to false interpretations of weak agglutinations against the bacilli of dysentery. And both infections may be present. The differential character of the discharge has been noted by Haughwout and Callender: isolated nuclei (30 to 80 per cent), Charcot-Leyden crystals, clumped red cells in amebic, 90 per cent pus cells, and macrophages showing fatty degeneration, "ghost cells" in the bacillary type.

The great majority of cases of amebiasis, according to Boyers, are the chronic infections with "fatiguability, abdominal discomfort (bowel conscious), neuritic symptoms, joint pains, and digestive disturbances." Craig says that nearly all E. histolytica infections are accompanied by indigestion, short diarrheas alternating with constipation, abdominal tenderness, neuralgias, general lack of vitality, and underweight. "Most 'carriers' have symptoms of their infection at some time, and require treatment for it." Boyers has recently emphasized the frequency, in most cases of amebiasis, of measurably increased liver dullness. Ravaut finds the clinical picture so definite that he recommends a therapeutic test when laboratory confirmation fails. No one should be given powerful drugs on such an untenable "diagnosis." But certainly when protozoa are found, it is advisable to use a therapeutic test before proceeding to an operation, even though the protozoan is a common one among the lower animals and frequent in man. The foregoing indications for stool examination may seem vague, but it is in cases in which the diagnosis is vague that protozoa should be most diligently sought. The symptoms of short, unexplained diarrheas, habitual constipation and abdominal distress are characteristic. "Intestinal protozoa should be suspected in every enteritis, hepatitis or other unusual disturbance that has not been proved up" (Ravaut).

In dysenteric stools the amebas are readily found in fresh preparations on warmed slides. The large active amebas with clear pseudopodia, even when containing red cells, may be the "Councilmania" variety of E. coli, not at present generally accepted as a species; but the error of mistaking them for E. histolytica is of no clinical importance, as the treatment is the same for both pathogenic amebas. Melnotte, in a review of twenty thousand stool examinations in Morocco, noted the "frequency of eight nucleate cysts" in patients with dysentery and various digestive disorders, and the clinical and microscopic cure of these patients with amebicides. Both he and Remlinger, apparently unaware (1928) of Kofoid's work, speak of the presence in Fez of forms intermediary between E. histolytica and E. coli, suggesting that perhaps it is a new species resembling both.

Except in dysentery, the examination should be made on a series of three, preferably six, daily stools obtained after giving bile salts, phosphosoda or bile to bring out the cysts. Stools containing oil, bismuth, or barium are useless. Wet fixed preparations stained with iron hematoxylin should be made from each specimen, for which a simple practical technique has been described by Pickard and Rice (1932). Reed and Johnstone (1932) advise sigmoidoscopic examination, making smears directly from ulcers which, when fixed wet, can be sent to a laboratory for staining and diagnosis. Dobell and O'Connor's "Intestinal Protozoa," Craig's "Parasitic Protozoa," Brumpt's "Parasitologie," Kofoid's reprints, are texts, all of which should be at hand for consultation. Their differences are instructive. The E. histolytica found in the chronic infections group Brumpt regarded as a separate species and as not pathogenic (1927. A fifth edition of his book is in press. . . .) The ameba in these cases without dysentery is clinically a different species. Simic, and Frye and Meleney have shown, experimentally, on animals, that amebic strains differ in pathogenicity. These controversies do not greatly concern the physician or his patient. The former will often find that the latter, presenting symptoms described as causable by amebiasis, shows instead a heavy infection with other protozoa. Melnotte gives giardia, chilomastix, and trichomonas in order of frequency, as causative agents of flagellate diarrhea, occasionally of dysentery. Perhaps chilomastix is commonest here. In any case appropriate therapy, such as the carbarsone recommended by Reed, and omitting emetin as a drug dangerous for general use in the temperate zone, will bring satisfaction to the patient even though the doctors may disagree as to why.

The chief difficulty in diagnosis is with the small races of amebas quite commonly found in the cases with a long history. An ameba or its cyst less than eight micra in diameter rarely shows the picture of an E. histolytica in miniature, on the "homunculus" order (shown in the text of Brumpt as E. hartmanni), by Dobel as the minute race of E. histolytica. The nuclear chromatin will often be clumped in a largish dot; on repeated daily search a time may come when the picture typical of E. histolytica is presented. Naturally, the usual appearance is that of the harmless E. nana. Cultures will clear the diagnosis. Cultures are not practical as a routine for self-supported laboratories. The time is better spent with the microscope. Iodin eosin preparations are never as diagnostic as the iron hematoxylin, and save no time in the end.

The diagnosis of the intestinal amebas must be made from the examination of the stained cysts. The difficulties of the diagnosis are sufficient to keep the workers in this field interested and require coöperation with the clinical side. This field is not one of those, if there are any, that are in the scope of the commercial laboratories practicing medical diagnoses.

* * *

CLINICAL AMEBIASIS

ALFRED C. REED, M. D. (350 Post Street, San Francisco).—There is a certain melancholy satisfaction, after some fifteen years of preaching in the wilderness on the dangers of amebiasis and its endemic and frequent appearance in the population of the United States, to find strong confirmation for these views in the recent disastrous epidemic in Chicago. A brief recapitulation of some of the clinical features involved, in the light of personal knowledge of the Chicago situation, may be of use.

Diagnosis.—It is to be remembered first, last and always, that diagnosis depends on one thing alone, and that is microscopic demonstration of Endameba histolytica. The disease should be suspected in all cases with gastro-intestinal symptoms, and also in all other cases of obscure nature whose diagnosis is not evident. Fresh stool specimens alone should be examined. These should be examined fresh immediately after being passed, in saline emulsion, and with iodin or Lugol solution stain. At the same time, smears should be made with camel's hair brush on clean slides, kept wet, and immediately immersed in Schaudinn's solution, according to the technique published by Reed and Johnstone.[1] These slides can then be sent to a reliable laboratory, for iron hematoxylin stain and final diagnosis. There is no characteristic symptomatology. Acute dysentery is becoming increasingly prevalent in California. In acute malignant cases there may be fever, but otherwise fever is not present except as the result of pyogenic secondary infection. There is no change in the blood count, gastric content or urine, in any way characteristic of amebiasis.[2]

Surgical intervention in cases which are essentially amebic is extremely dangerous, and has accounted for a high death rate during the past six months in this country. Gangrene of the bowel, perforation and peritonitis are prone to follow. Amebic infections should be cleared before operation when appendicitis, acute gall-bladder disease, perforated ulcer, etc., are suspected. It is to be remembered that liver abscess is prone to occur in the present epidemic in the early stages of the infection, and must always be suspected when there is pain in the region of the liver, low temperature and low or moderate leukocytosis.

Preventive Measures.—It is also important to remember that, in the present epidemic, for the first time, acute cases of dysentery tend to show cysts in the stools. This means that acute cases may be contagious, a thing that has not been considered probable or possible before. The housewife or food handler of the family or hotel or restaurant must always be under observation when amebiasis comes into account. Personal hygiene, clean hands, avoidance of contamination of food and drink, are the best means of prevention. A major factor in the Chicago epidemic appears to have been water carriage from sewage contamination of hotel water supplies. This does not mean that it is necessary to have intensive surveys of food handlers and of employees of hotels in general all over the country. It does mean exactly the following, and this is the important lesson from the whole epidemic. Practicing physicians must be trained to suspect amebiasis, and to report it immediately on its diagnosis in all cases coming to their attention. The local board of health then has a definite normal endemic index of occurrence of cases. Whenever this index increases, the board of health immediately surveys the location in which the increase has occurred. In this way epidemic dangers are nipped in the bud. There is a clean-up of all local foci of infection, and the public health is adequately protected. Other methods are too expensive, too complicated and too uncertain to offer practical value.

Treatment.—Treatment preferably should be by the use of carbarsone, two or three capsules, each containing 0.25 grams, daily for ten days by mouth. In the presence of ulceration of the lower bowel, which is marked or serious, carbarsone irrigations may be given, as described by Anderson and Reed,[3] as follows: Two grams of carbarsone are dissolved in 200 cubic centimeters of one per cent sodium bicarbonate. After a preceding cleansing enema, this solution of carbarsone is gently injected at body temperature into the rectum and retained as long as possible, preferably overnight. This procedure is followed for six consecutive nights. It is usually better to give the carbarsone course by mouth first, and follow with the rectal course if such be indicated, rather than give the two together. When liver abscess is suspected, or there are symptoms referable to the liver, it is preferable to give one grain emetin hydrochlorid daily hypodermically for five days, and then follow with carbarsone, as indicated above, provided there is no evidence of serious renal or liver damage. Vioform may be substituted for carbarsone, or alternated with it, giving 0.5 grams in gelatin capsules twice a day for ten days. In every case it is necessary to follow the stools for six months after termination of treatment, examining three specimens each two weeks, before one can be reasonably assured of actual protozoölogic cure. Once more the caution must be given that emetin is a dangerous drug; that it makes no difference by what method it is given; that only the total dosage is important; and that there is definite danger of poisoning of the heart muscle, and that this poisoning is often more or less permanent.

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1 Reed, Alfred C., and Johnstone, Herbert G.: Method for Diagnosis of Amebiasis, J. A. M. A., 99: 729 (Aug. 27), 1932.

2 Reed, Alfred C.: Clinical Amebiasis, CALIFORNIA AND WESTERN MEDICINE (Jan.), 1934.

3 Anderson, H. H., and Reed, Alfred C.: Carbarsone Rectally in Amebiasis, Amer. Jour. Trop. Med., May, 1934.

California and Western Medicine
Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California and Nevada Medical Associations
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
Telephone Douglas 0062
Address communications to the EDITOR, as per the above address.

EDITOR . . . . . GEORGE H. KRESS
Associate Editor for California . . . . EMMA W. POPE
Associate Editor for Nevada . . . HORACE J. BROWN

Advertising Representative for Northern California
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A. GUTTMAN, 1925 Wilshire Blvd., Los Angeles (VA 1221)

Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

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EDITORIALS*

AN INJUSTICE WHICH SHOULD BE REMEDIED

Poliomyelitis and a County Hospital.—Reference to the present poliomyelitis outbreak was made in the June issue of CALIFORNIA AND WESTERN MEDICINE, and will be found on pages 410 and 428. In the same number, on page 427, were comments on the thirteen-million-dollar massive unit, recently dedicated, of the Los Angeles County Hospital; one of the subparagraphs, in those remarks, bearing the caption: "Why Unappreciation Exists." Mention is made of these two topics, because certain more recent events, affecting the care of poliomyelitis patients at the Los Angeles County Hospital, have created a proper basis for calling attention to what is little less than a deplorable situation. Since similar conditions can easily come into being in other counties of California, the subject should be of general, as well as local interest.

* * *

Problems Which Have Arisen in the Present Poliomyelitis Epidemic.—To understand the following statements, the situation that exists at the time these lines are written should be briefly sketched. Director J. D. Dunshee of the State Board of Health, in his article in last month's journal (page 410), pointed to the fact that this year the epidemic of poliomyelitis in California had started earlier than with previous outbreaks, and that the indications pointed to a still more serious visitation. At this writing, the epidemic is largely localized in southern California, but the wave will probably branch northward. Because the members of the California State Board of Health also felt that the spread of the disease had created a serious situation, they authorized the printing and mailing to every physician in California of a brochure reprint originally brought out by the American Medical Association in 1933 and entitled, "Suggestions on Poliomyelitis."

Elsewhere in this issue, too (see page 69) are printed some press and other reports on the later incidence of poliomyelitis in California. On June 14, for instance, at Los Angeles, in the new acute unit of the County Hospital, there were a total of 319 poliomyelitis in-patients registered; and in addition, 199 in-patients were under observation for possible poliomyelitis.

* * *

Doctors and Nurses Go Down with Poliomyelitis.—These poliomyelitis in-patients at the Los Angeles County Hospital included three resident physicians, one interne, and twenty-four nurses, all of whom had contracted the disease while in the institution—a fact receiving mere passing notice in the lay press, although the space and comment there allotted were nothing comparable to that usually given to cases of injury to two or three policemen or firemen; yet these physicians and nurses, in the quiet and difficult performance of their duties, have contracted a dread disease that may disable one or more of them, more or less permanently.

* * *

A Distressing Phase of the Situation.—But that is not all; the worst feature is this: these same attending and resident physicians, internes and nurses (if they shall have become disabled while in the performance of duty—while they were thus bravely and unostentiously risking both their future and their very lives in caring for the sick of the Los Angeles County Hospital) can at the time of this writing expect from the rich County of Los Angeles little or even no monetary or other aid in the way of recompense for such disability. In other words, these physicians and nurses who shall have made so great a, and perhaps almost the supreme sacrifice, cannot look forward, if impaired and dependent, to any support from the public treasury, as may, and properly, our policemen and firemen! Indeed, the resident physicians, while incapacitated and under treatment in the hospital, cannot receive even their "regular, full" pay. The internes, with their modest monetary stipends of ten dollars per month, and the student nurses with even less, or no stipends at all, need not worry about immediate financial recompense during illness, because, from the money standpoint, they receive at most practically nothing and, therefore, from the legal standpoint, can never ex-

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

pect anything whatever. The special nurses, on duty at about fifty cents an hour, could likewise receive little or comparatively nothing. However, these internes and nurses have equal right to worry about post-illness sequelae, because such end-results may mean the same partial or total disability as is possible to accrue to lay patients. These facts are presented because they show some of the possible tragical consequences, from the standpoint of individuals directly affected, when the medical profession, through overmodesty or other cause, fails to place before the public, in ample time, its just claims for fairer treatment to disciples and assistants.

* * *

Inconsistency in Rewards.—In this particular case of the County of Los Angeles, therefore, we are thus confronted with a most startling fact or two: first, that the county has just completed a thirteen-million-dollar hospital building, paying the architects alone one million dollars for service entailing no risk of life or limb, and secondly, that while a poliomyelitis outbreak in the county has caused an influx of a large number of infantile paralysis patients into its public hospital (no private hospitals admitting such patients), resulting in the infection of almost thirty of the county's doctors and nurses, there is not a penny in any fund to compensate these public servants in case of permanent disability. Surely the rewards to the architects, on the one hand, and to the doctors and nurses, on the other, seem incongruous, or worse, do they not?

* * *

Are Conditions Which Exist Fair?—The unhappy possibilities outlined above are under consideration by members of the Medical Board of the Attending Staff, and as will be seen from the resolutions printed on page 69 of this issue, steps have been taken to acquaint the county officials with the facts. Under present conditions, it is not to be wondered at that some of the internes and nurses are reluctant to go on service in the poliomyelitis wards. To be overworked to the point of exhaustion, thus predisposing to infection, and at any moment to be stricken down, with the possibility of more or less permanent disability and dependence upon others; and yet to know, at the same time, that not one penny, or only a very meager amount of money or pension support, will ever come from the rich community in whose name, and on whose behalf such service is rendered, is to create a state of mind wherein it is natural for a thinking individual to ask himself, "For whom, and for what, do I take these great risks to myself, as well as to those to whom I myself am most dear; and why should I, under such circumstances as exist, even venture so to do?"

* * *

Rôle of the Physician in Private Practice Is Different.—Once a physician takes up his work in private practice, he willingly assumes the various risks incident to the life and labors of his profession. This is proven everywhere, day after day, and under all forms of circumstances; and that is why Stevenson wrote his well known, glowing tribute to the physician.* There is a difference, however, between such a physician in private practice, and the interne or nurse in a public hospital, where, as members of the personnel of such a hospital, these latter are employed by the taxpayers for public service. Such interne or such nurse employees, receiving little or no wages from their employers (the taxpayers), are certainly entitled to the same kindly treatment from the citizen-employing public, accorded, through statute, by the taxpayers to policemen and firemen who, in their respective fields, may be called upon to risk their lives in performance of duty on behalf of the public. Surely the care of citizens whose health and lives are imperiled, and who, if left uncared for, may menace the health and lives of fellow citizens, is as noble a work as that already referred to, and gladly acknowledged, of the police and fire departments. With diseases like poliomyelitis, the proportionate danger to the personal health and lives of those who are called upon to minister, as physicians and nurses, is quite as great or greater than that to which police-guardians or fire-fighters are exposed.

* * *

The Board of Supervisors Should Take Action. It is hoped, therefore, that the Board of Supervisors of Los Angeles County, and boards of other California counties facing similar conditions, will immediately take steps to inaugurate, through proper orders or ordinances, the necessary protection of county hospital employees, such as physicians and nurses.† If the point is raised that there is not sufficient legal authority to institute these measures of plain justice to faithful servants of the community, then plans should be made to secure adequate enabling or other laws to cover the needs in question at the state legislative session which will convene at Sacramento on January 2, 1935. The matter is one of vital importance. Movement for protective measures should be pushed before the public forgets its own scares, such as the dread of infantile paralysis.

In the meantime, as indicated in the resolutions printed on page 69, some of these ends can be attained by having county hospital authorities hire emergency physicians and graduate nurses on

* "There are men, and classes of men, that stand above the common herd, the soldier, the sailor, the shepherd not infrequently, the artist rarely, rarelier still the clergyman, the physician almost as a rule. He is the flower of our civilization, and when that stage of man is done with, only to be marvelled at in history, he will be thought to have shared but little in the defects of the period, and to have most notably exhibited the virtues of the race. Generosity he has, such as is possible only to those who practice an art, and never to those who drive a trade: discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sick room and often enough, though not so often as he desires, brings healing."—Robert Louis Stevenson.

† At a special meeting of the Advisory Board of the Attending Staff of the Los Angeles County Hospital, held on June 15, resolutions were passed requesting the Board of Supervisors to place on adequate salary all internes, nurses or other employees, when symptoms of poliomyelitis became manifest. By that procedure, in case of disability, such salaried employees would come under the provisions of the Industrial Compensation Act. It is gratifying to record that the Board of Supervisors took favorable action in these matters. Further information is given on page 69.

ample salary, so that if disability from paralysis should come through such employment, the Industrial Accident Act would permit disability ratings that could compensate somewhat for lack of pensions. It would seem easy, therefore, to render justice in these matters if only the will exists to do so. Present-day economic stress and strain should not thrust themselves forward as a supposedly-legitimate argument in these circumstances. As previously stated, now is the time to hammer home some homely truths, and to establish present and future beneficial procedures.

PRESIDENT ROOSEVELT'S MESSAGE ON SOCIAL WELFARE

Last month's CALIFORNIA AND WESTERN MEDICINE printed the minutes of the Riverside meetings of the California Medical Association's House of Delegates and Council. The Committee of Five, authorized by the House of Delegates to make a study of the costs of sickness and its relation to social, economic and other factors, has before it a large task, and in its labors will need the aid and coöperation of all members of the California Medical Association.

When President Roosevelt sent his June 8 message to Congress, the lay press gave generous comment thereto. For those readers of CALIFORNIA AND WESTERN MEDICINE, who did not have an opportunity to read the message in its entirety, the following paragraphs, dealing with social welfare factors (health insurance was not specifically mentioned in this message; may come later), should be of interest:

Washington, June 8.—The text of President Roosevelt's message to Congress today follows:

"You are completing a work begun in March, 1933, which will be regarded for a long time as a splendid justification of the vitality of representative government. . . .

"Among our objectives I place the security of the men, women and children of the nation first.

"This security for the individual and for the family concerns itself primarily with three factors. People want decent homes to live in; they want to locate them where they can engage in productive work, and they want some safeguard against misfortunes which cannot be wholly eliminated in this man-made world of ours. . . .

"The third factor relates to security against the hazards and vicissitudes of life. Fear and worry based on unknown danger contribute to social unrest and economic demoralization. If, as our Constitution tells us, our Federal Government was established among other things "to promote the general welfare," it is our plain duty to provide for that security upon which welfare depends.

"Next winter we may well undertake the great task of furthering the security of the citizen and his family through social insurance.

"This is not an untried experiment. Lessons of experience are available from states, from industries and from many nations of the civilized world. The various types of social insurance are interrelated; and I think it is difficult to attempt to solve them piecemeal. Hence, I am looking for a sound means which I can recommend to provide at once security against several of the great disturbing factors in life—especially those which relate to unemployment and old age.

"I believe there should be a maximum of coöperation between states and the Federal Government. I believe that the funds necessary to provide this insurance should be raised by contribution rather than by an increase in general taxation. Above all, I am convinced that social insurance should be national in scope, although the several states should meet at least a large portion of the cost of management, leaving to the Federal Government the responsibility of investing, maintaining and safeguarding the funds constituting the necessary insurance reserves.

"I have commenced to make, with the greatest of care, the necessary actuarial and other studies necessary for the formulation of plans for the consideration of the Seventy-fourth Congress.

"These three great objectives—the security of the home, the security of livelihood, and the security of social insurance, are, it seems to me, a minimum of the promise that we can offer to the American people. They constitute a right which belongs to every individual and every family willing to work. They are the essential fulfillment of measures already taken toward relief, recovery and reconstruction. . . .

"We must dedicate ourselves anew to a recovery of the old and sacred possessive rights for which mankind has constantly struggled—homes, livelihood, and individual security. The road to these values is the way of progress. Neither you nor I will rest content until we have done our utmost to move further on that road.

(Signed) "FRANKLIN D. ROOSEVELT."

AMERICAN MEDICAL ASSOCIATION AND HEALTH INSURANCE

For those readers who do not receive *The Journal of the American Medical Association* (in which publication the full proceedings of the American Medical Association House of Delegates will be printed), a short digest of the action taken in relation to health insurance, as given in Associated Press dispatches, is here reprinted. It will be noted that the principles therein laid down are those of the Council and Department of Public Relations, which, through the House of Delegates, have also been emphasized by the California Medical Association. The summary is worthy of perusal, because these fundamental principles must be kept in mind in the elaboration of health insurance plans which would have the endorsement of the medical profession. Quotations follow:

"The principles evolved in the executive session (of the American Medical Association House of Delegates) for guidance of members in communities where 'some experiment to change the method of administering medical service' is attempted, insist:

"That all features of medical service be under the control of the medical profession, for 'no other body or individual is legally or educationally equipped to exercise such control.'

"That 'no third party' must be permitted to come between patient and physician in any medical relation; that patients must have absolute freedom in choosing their doctor; that the method of giving service must remain a 'permanent, confidential relation' between patient and 'family physician.'

"That all medical phases of all institutions involved in the medical service should be under professional control, 'it being understood that hospital service and medical service should be considered separately.'

"That however the cost of medical service may be distributed, the immediate cost should be borne by the patient able to pay at the time the service is rendered; that medical service must have no connection with any cash benefits; that any form of medical service should include all qualified physicians of the locality covered who wish to give service.

"That systems for the relief of low-income classes should be limited strictly to those below the 'comfort level' standard of income, and that there should be no restrictions of treatment or prescribing not formulated and enforced by the organized medical profession."

POLIOMYELITIS STUDIES AT LOS ANGELES COUNTY HOSPITAL

The June CALIFORNIA AND WESTERN MEDICINE, on page 410, in the article on the present status of epidemic poliomyelitis, by Director J. D. Dunshee of the State Board of Health, printed a line cut showing the California incidence curves of the disease in the years 1925, 1927, 1930 and 1934. This year its morbidity is running less true to past form. An increasing number of cases may be expected as the disease travels northward from southern California. The outbreak has attracted the attention of medical men and research workers throughout the United States. In addition to the representatives from the Rockefeller Foundation, it is possible that other research workers will come to California to study the disease. The following news account, taken from the Los Angeles *Times* of June 18, in which attention is called to the arrival at the Los Angeles County Hospital of representatives from the Rockefeller Institute and Yale University, may have interest to physicians in other parts of the state:

"Arriving on the Santa Fe from the East yesterday afternoon, Dr. John R. Paul and Dr. Leslie T. Webster, sent to Los Angeles by the Rockefeller Medical Institute for research work in connection with the poliomyelitis outbreak, dodged all attention from a social standpoint and within an hour were established in the laboratories in the city health building planning a program of intensive work.

"The two were met at Pasadena by City Health Officer George Parrish, who interested the institution of the survey at the expense of the Rockefeller Foundation. . . . They declined to make any statements except that they are here to work.

"Doctor Paul is from Yale Medical Institute and Doctor Webster is one of the chief assistants to Dr. Simon Flexner, head of the research bureau of the Rockefeller Institute. It was Doctor Flexner who, in 1910, obtained the first definite theory that infantile paralysis is caused by a filterable virus, but little has been learned in addition as to the source and prevention.

"It is the plan of the two physicians, with the assistance of Dr. James F. Trask, of Yale Medical Institute, who will arrive Sunday, to undertake exhaustive laboratory tests and research in an effort to isolate the poliomyelitis virus and, through inoculation experiments with monkeys, seek prevention of the disease in the interest of humanity.

"The result of their tests, it was intimated, will not be made public until they have returned and made their report to Doctor Flexner of the Rockefeller Institute.

"Chief concern was expressed by the two physicians for the care of twenty monkeys brought with them from the East for inoculation experiments. Doctor Paul expressed opposition to any special attention being given by strangers to the simians, stating that they had become excited and nervous on the train trip and that it is very necessary for the success of experiments that they be kept quiet and allowed to rest. . . ."

DR. GEORGE G. REINLE ELECTED VICE-PRESIDENT OF THE A. M. A.

At the Cleveland session of the American Medical Association, on June 14, the House of Delegates elected Dr. George G. Reinle of Oakland as vice-president of the national organization. Doctor Reinle's term as president of the California Medical Association came to an end at Riverside in May. Last month words of appreciation were given in this column for his excellent services on behalf of organized medicine in our own State. It is pleasing to note this American Medical Association recognition of California, and of the merits of one of her sons. To Doctor Reinle, on the coming of this new honor, are extended the congratulations of his friends and fellow members in the California Medical Association.

THIS AND THAT

Ill-Advised Publicity.—When emotionally-biased persons group themselves into societies with high sounding preambles to elaborate the purposes of their organizations, the influence resulting from their propaganda is a something that not infrequently must be reckoned with. The members of some of these groups, such as the extreme anti-vivisectionists, at times are almost fanatical in the espousal of their programs. On that account scientific research is in constant danger, through legislative restrictions sponsored by anti-vivisection organizations. Therefore it behooves university authorities to be on guard, to prevent so-called research studies of a spectacular nature, which in lay press accounts become easily distorted. A recent case in point was that of an assistant at Berkeley, who, through so well known a news agency as the Associated Press, was referred to, on April 24, as a "research professor at the University of California," etc., etc. The photographs and description of his dog experiments were given widespread and repeated publicity, and in places did great harm to real scientific research. The fact that the individual in question had only a minor position in the chemistry department at the University of California was not exploited by the lay press, but the name of that great institution was, the publicity doing it, the State and scientific research, considerable harm. The individual in question was given an exit from the Berkeley campus, but that action, even though prompt, could hardly undo the damage of his ill-advised experimentation and its equally undesirable publicity. It might be stressed that this project was undertaken independently, under CWA support and funds, and was not submitted to or authorized by the research authorities of the University of California.

* * *

Alameda Health Insurance Exposé.—In the CALIFORNIA AND WESTERN MEDICINE for April, pages 262 and 317, considerable space was given to an account of the successful efforts of District Attorney Earl Warren of Alameda County, in sending some health insurance racketeers to the penitentiary. It is hoped that the good work inaugurated at Oakland will be seriously followed up in other counties of the State, and especially in counties having the larger cities, in which such pseudo-health insurance organizations seem to thrive.

These health racketeers are not the immediate offspring of our present-day economic conditions,

as some physicians are prone to think. The scheming brains in back of certain of these shrewd plans have been in operation in California for more than a quarter of a century.

During these years they were insidiously increasing in number and in malodorous endeavor, with such success in their profitable and grafting enterprises, that, like other bootlegging racketeers, they feared and stopped at nothing. County Society officers should keep in touch with their respective district attorneys, so that efforts to eliminate these make-believe health organizations may be successful.

The excerpt from the Twenty-Five Years Ago column to which reference was made follows:

"*A New Shame.*—And now comes 'The Pacific Coast Hospital Association,' 'A progressive modern enterprise that combines money-making with a great public benefaction.' The offices of the institution are in the Union Savings Bank Building, Oakland, and it seems to be presided over and generally managed by one McCullough Graydon. A booklet just received is most illuminating. The scheme, of course, is the same old 'dollar a month' medical-treatment-contract business." . . .

* * *

Malpractice Defense.—Another item printed in this official journal of the California Medical Association as long ago as June, 1909, was a discussion of the need of malpractice insurance, and the desirability of having the California Medical Association undertake steps to maintain such defense for its members. The excerpt reads as follows:

"*Medical Defense.*—Last year, at a meeting of the House of Delegates, a committee was appointed to investigate the question of the State Society undertaking the defense of its members in malpractice suits, and to report at the San Jose meeting . . ."

As a result of the above agitation, such a defense organization came into existence, and was maintained by the California Medical Association for some years, until lack of coöperation made it desirable to wind up its fiscal affairs. Some of its activities are still carried on under the name of the "Medical Society of the State of California," and members who desire information thereon can secure it by writing to the Association Secretary, Four Fifty Sutter Building, San Francisco. It is an enterprise worthy of support. It may be of interest to members of the California Medical Association who read State Senator Ralph E. Swing's article on "Malpractice—As an Attorney Sees It" (April CALIFORNIA AND WESTERN MEDICINE, page 221), that a request was received by the editor from one of the large insurance companies of America, asking permission to reprint that article, because of the excellent advice contained therein. It cannot be too often repeated that all physicians would do well to refrain from directly or indirectly criticizing the work of colleagues, until they were correctly informed of all the facts, including a full statement from the physician whose services are in question, because such statements have repeatedly laid the foundation for court actions. If you did not read Senator Swing's article, take the time to glance through it.

EDITORIAL COMMENT*

WHO SHOULD BE STERILIZED?

II†

The sterilization law under which we operate in California requires the superintendent to obtain the consent of the directors of the Department of Institutions and of the Department of Public Health. These officers request us to obtain the written consent of the next of kin. In requesting this permission from the relative, we state our reason for advising sterilization in the individual case. The patient and his relatives are not so much interested in the broad social problem, as in the effect on this particular patient. We are careful not to claim any curative effect, but stress the removal of possible causes of future attacks, and that we plan with women patients to correct any abnormal condition found when the abdomen is opened. In conjunction with sterilization, uterine tumors, diseased tubes, ovaries, and appendices are often removed, hernias are corrected, and other repair work done; and the promise of this work often persuades the hesitating relatives.

As we do not wish the decision left to the patient, we discuss it with him as little as possible. During a patient's stay in the hospital, before the question of sterilization is raised, we try to inspire his confidence in his physician, and then advise him that we consider an operation desirable before he goes home, very much as we would recommend that he should have his throat swabbed for tonsillitis. Usually this attitude is reassuring to the patient, and no objections are offered.

One woman spent almost all her hospital residence on the ward where these sterilized patients are cared for during the postoperative period, and thereby gained the viewpoint of the sterilized women. As her improvement progressed, she took the initiative in requesting sterilization. She explained that she had four children, had since had three abortions induced, and wished to go home and care for her children without the risk of future pregnancies, as she realized the dangers of sterilization were less than those of induced abortions.

It is very necessary that people be correctly informed about sterilization. In the past, due to over-enthusiasm, or misinformation, extravagant claims of improvement have been made. I had the opportunity to examine a group of the first patients sterilized in one hospital, and to review their records fifteen years after the operations were done. This group was composed of young male dementia praecox patients, and following the operation there were claims that they were quieter, less erotic, more compliant, etc.; but when re-

* This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

† Part I of this paper appeared in the June CALIFORNIA AND WESTERN MEDICINE, page 429.

viewed fifteen years later they all showed gross deterioration, and there was nothing to distinguish them from their unsterilized mates.

Sterilization has been recommended as a remedy in the case of the sex offenses of the senile. These senile sexual acts are due to the mental condition, and there is no anatomical or physiological reason why sterilization should rejuvenate the mind, even though the operation has been advocated for sexual rejuvenation. If the operation should restore the sexual potency without restoring the mental potency, it is reasonable to expect more offenses of the same kind, rather than less.

It has been claimed that sterilized women would be more promiscuous, and that prostitution and venereal disease would be increased. Our follow-up work does not show such a result. The patients who were hypersexual before operation were still hypersexual after. In fact, all their reactions were much the same as before operation.

There has also been the fear that men would be more apt to commit rape if sterile. The punishments for rape are certainly more severe than for bastardy, and no one who has studied sex crimes would expect the inhibitions of a rapist to be influenced by the possible outcome months hence.

In one instance, our patient's wife complained that she was embarrassed by the husband proposing sexual relations to the wife's friends, and assuring them of their safety as he had been sterilized.

The question is occasionally asked, Might not one of these patients be the parent of a genius? There seems to be a wide divergence of opinion as to what actually constitutes a genius, but all will agree that a genius must be gifted with superior intelligence. In studies of a large group of superior high school and college students, it was found that the parents were also above the average intelligence level, and were sufficiently capable to provide a superior background for the children. Incidence of insanity in the ancestry of these gifted children is so low that the extremely small number of such parents who would be liable to be sterilized is negligible.

In the individual case we now rarely get objections from the better educated on grounds of religion. Some denominations still object as a general policy, but their ministers often assist us in getting the consent of the relations in individual cases. We still have to deal with those who claim we are depriving these patients of a God-given right to reproduce their kind or worse.

When deciding about sterilization, we ask ourselves these questions:

Will the patient's chances of relapse be increased by child-bearing or child-rearing?

Will the patient be able to provide proper environment and training for children?

Will the patient's children inherit his mental traits?

Our task is still one of education. We must combat the fallacy that sterilization is curative. We must clear up the confusion of sterilization as practiced, and castration, and distinguish the different effects of the two, and we must convince that sterilization does not destroy sex desire or make men impotent.

Norwalk State Hospital.

M. J. Rowe,
Norwalk.

EPIDERMOPHYTOSIS

The problem of the clinical control of epidermophytosis, known to a layman as "athletic foot," is one of a tremendous interest, both from a theoretical and a practical point of view. Its practical importance is derived from its universal distribution in the adult population, reaching almost the size of a pandemic. The theoretical interest is due to its remarkable resistance to all external applications in many cases, and to a still more puzzling tendency to recurrences and acute flare-ups.

It is impossible to state with any degree of certainty whether cases of epidermophytosis, in its currently familiar manifestations, are actually on the increase numerically, or merely seem so because of the better understanding of it and more frequent recognition by the general profession. Personally, I believe that the latter is the case.

Theoretically, it is almost incomprehensible that a seemingly superficial fungus infection of the skin, which is so easily controlled and cleared up in many cases by mild antizymotic applications, resists any and all applications in apparently similar cases. No definite explanations of these facts, neither clinical nor experimental, have so far been advanced. One can plausibly look for explanation of this enigma to a hypothesis, apparently of speculative nature, yet confirmed by clinical experience. This is the assumption of variation in the susceptibility to fungus infection on the part of individual skins. This biologic weakness is expressed, clinically, both by the increased susceptibility to fungus infection, and also by a more protracted course of the infection and a weaker response to standard local applications. I am strongly in favor of this hypothesis. Only in this way can be explained the common observation that, in two apparently identical cases, one will clear up under a very small amount of routine local applications, while the other case will resist all of them or will show an uncontrollable tendency to recurrences.

It is my belief that the key to the therapeutic solution of the epidermophytosis problem lies not in the discovery of a new antizymotic drug. Many of the used drugs at present are sufficiently effective, as demonstrated both by clinical experience and bacteriologic experiments.[1]

The data revealed in this report show a considerable discrepancy with clinical observations. While iodin, the one empirically undisputed supreme bactericidal and fungicidal agent, is given the first place on the list, other clinically established fungicides, such as salicylic acid, sulphur, benzoic acid and formaldehyd, are given a surprisingly low fungicidal quotient. Since the clinical test is the one final test in therapeutic deductions,

1 Emmons: Fungicidal Action of Some Common Disinfectants on the Dermophytes, Arch. Derm. and Syph., 28:15 (July), 1933.

these laboratory findings can be accepted only with reservations.

Very recently an allegedly new specific local fungicidal drug, phenylmercuric nitrate, was offered as possessing a superior therapeutic value in tineas.[2] But my personal experience in a limited series of cases does not bear out the superior results claimed for it.

In my opinion, the clinical control of epidermophytosis cannot be obtained by local measures alone, in spite of the best technique, neither with fungicidal applications nor with actinotherapy, x-ray included. The systemic attention in the way of increasing the resistance of individual to mycotic infection should be supplemented. It can be attempted along immunologic lines, with injections of trichophytin in gradually increasing dosage.[3]

The results with the present status of technique are not conclusive. Furthermore, the procedure requires considerable competence and caution, as otherwise serious toxic reactions and damage may result. It seems, however, that the best results may be obtained ultimately from the attempts in this direction.

I believe, also, that other systemic correlated factors should be looked after, such as diet, particularly in regard to sugar reduction, and also hyperidrosis, palmar, plantar and axillar and inguinal, as these play a considerable part as a predisposing factor to fungus infection. The hygienic measures of individual and social nature should be integrated as an important link in the chain of the therapeutic measures of the clinical control of epidermophytosis.

1930 Wilshire Boulevard.

Moses Scholtz,
Los Angeles.

THE PHYSICIAN HIMSELF

I

On the occasion of a recent large medical gathering, the program consisted of a single address on "Medical Caricatures." And most entertaining it proved, too. But certain reflections, inspired by the subject and its presentation, seem much more serious than entertaining.

Why should medicine and the medical man so commonly be regarded as legitimate targets for the would-be-funny cartoonist and caricaturist? Is the explanation to be sought in the profession or in the individual physician? Undoubtedly the latter is the case, because the profession is judged solely by the members who compose it. The faults and foibles so often the themes of ridicule in lay publications, plays, and "movies," are practically always personified in some "Doc," or "Dr. Quack."

The individual physician—is he all that he might be for the furtherance of his own best interests, and for the dignity and public repute of his calling? What manner of man is the modern physician? The outstanding human value is character. Does he measure up from this viewpoint?

When the scientist investigates inanimate nature he reaches conclusions which may be expressed only in imponderable terms and symbols. Likewise, when animate nature is analyzed, the ultimate phenomena of life and conduct are found to consist of elements and combinations of elements to which fanciful terms must be assigned. One of these terms is character. It is scarcely possible to segregate and define the subtle factors which enter into the concept of character, but everyone knows what they mean.

Integrity, conscience, morality, discretion, sobriety, charity, high purpose—not arrogance, conceit, greed, "four-flushing"—are some of the qualities the individual physician must manifest if the profession is to be protected from the ill-considered, often venomous, attacks of the caricaturist. Humor, real humor, is not objectionable when its intent is to evoke a healthy smile or teach a wholesome lesson. And in fairness it must be admitted that the thrusts of paragrapher and cartoonist do occasionally appear to spring from kindly motives.

In our capacity simply as men and women we may smile, or even guffaw, at the sallies, sometimes clever, sometimes merely coarse, of the caricaturist. But in our hearts we realize that they hurt, and that our profession should be beyond the possibility of such odious derision.

For long years the medical profession has been on the defensive. Acting through organizations it seems wholly unable to attain and maintain its rightful place in the confidence of the general public. "Education of the people," the idealistic slogan so long extolled as a panacea, seems impotent to meet the insidious propaganda of the designing and the vicious.

The issue is with the physician himself—his character and the impression he makes in his personal contacts. Nobility of character on the part of each member-unit is the only means by which the profession, as a whole, may hope to enjoy a position invulnerable to the shafts of ridicule, satire, and malice.

947 West Eighth Street.

A. B. Cooke,
Los Angeles.

SCARRING IN ACNE

Scarring, which becomes apparent after the cure of a case of acne, has been a question before the minds of physicians for many years. We are all familiar with the immense amount of damage done to the skin by severe cases, but we are often presented with the decision as to whether or not the scarring has been increased by x-ray therapy, or whether it has been decreased or not modified through this agency. The appearance of the scarring at the end of treatment has been the basis for many lawsuits which have been directed toward the innocent physician because the patients are dissatisfied with the appearance of their skin, and refuse to accept the fact that the scarring must necessarily be the result of the disease. The lack of understanding of this fact by a lay jury has often been the cause of an adverse decision directed toward the physician. The patient finds the scars to be apparent after the disease has

2 Levine, B.: A. M. A. A., 101:2109, 1933.
3 Wise and Sultzberger, J. A. M. A., November 19, 1922.

healed and the inflammation has left the skin. Their attention has been so thoroughly centered on the swelling and pustulation of the disease that they have given no consideration to the fact that scars are being formed. These scars become noticeable after the swelling has gone. The physician and the x-ray treatment are blamed for this unfortunate condition.

Dr. Henry D. Niles of New York has published an article in the January, 1933, *Archives of Dermatology and Syphilology* in which he gives the record of forty cases which he treated in a manner to compare the effect of x-ray in the production of scarring with other methods of treatment of various types of acne. The summary of this article is as follows:

1. In forty patients who were given an average of twelve and one-half weekly exposures of one-fourth skin unit of roentgen rays on one side of the face, and a placebo treatment on the other, the scars were equal on both sides in thirty-two cases, more pronounced on the untreated side in five, and greater on the treated side in three.

2. The amount of scarring after acne vulgaris depends on the severity and duration of the eruption and the tendency of the patient's skin toward scar formation. This seems to be neither increased nor decreased by roentgen therapy.

3. In nineteen of the forty patients, the untreated side was either entirely cured or almost well, and as much improved as the treated side. Several theories as to the possible explanation of this unexpected finding are given.

The above series naturally will have to be added to considerably before we can make a proper statistical survey; however, they do definitely prove that we are certainly not damaging our patients through the use of proper x-ray therapy, and that it is probably preferable to other types of treatment in cases in which the damage to the skin is relatively severe.

407 Medico-Dental Building.

MERLIN T.-R. MAYNARD,
San Jose.

SALT SUBSTITUTION THERAPY IN ADDISON'S DISEASE

It has been demonstrated experimentally that a loss of sodium and chlorin particularly, as well as a negative balance for calcium, magnesium, potassium, phosphorus and nitrogen occurs in adrenalectomized animals.[1] Because of the loss of these basic elements, Rubin and Krick directed their treatment toward replacing them; and the improvement which followed was striking: untreated controls died in ten days, whereas rats receiving the salt mixture survived in apparent health for four months. These investigators believe it is probable that the action of the adrenal cortical hormone is primarily one of salt regulation. It is known, further, that sodium excretion is augmented in adrenalectomized animals.[2]

Loeb and co-workers [2] have observed a decrease in the sodium concentration of the blood serum in Addison's disease patients, and by diminishing the salt intake they have promptly induced symptoms of adrenal insufficiency. Administration of large amounts of sodium chlorid, on the other hand, brings about marked clinical improvement, which parallels the sodium level of the blood serum. Harrop et al.,[3] and Rogoff [4] appreciate this also, since Harrop suggested the use of a salt-free diet as a diagnostic measure. Rogoff has noted a "spectacular resuscitation from coma by intravenous saline solutions."

Our experience in maintaining an Addison's disease patient in apparent health, with sodium chlorid substitution therapy alone, confirms these observations. In this instance, the cost of cortical extract was excessive for this individual, so salt was prescribed. Eschatin had been given in recommended amounts over a four weeks' period, with some improvement, but the patient was not able to leave her bed. A salt-poor diet for a ten-day period aggravated the typical symptoms of Addison's disease. Blood (plasma) sodium chlorid was 508 milligram per cent before treatment (normal range 570 to 620 milligram per cent). Ten grams of table salt were given orally daily and eschatin was discontinued. Within ten days the patient was up daily, and in two weeks after onset of therapy she was able to care for herself entirely. She has since been well, except for ankle swelling which occurs when her blood salt level exceeds the normal range. Over a four months' period the blood (plasma) sodium chlorid content has ranged from 564 to 653 milligram per cent.

In our opinion, salt substitution therapy should be used in maintaining the normal level of sodium chlorid, as well as other elements found to be deficient in these individuals. It is probable also that the administration of sodium chlorid exerts some sparing action on other mineral metabolism. Since but approximately 10 per cent of the normal amount of adrenal cortical tissue is needed for life, and since glandular therapy is expensive and not entirely satisfactory when used alone, more attention should be paid to salt metabolism in Addison's disease. Increases in blood non-protein and urea nitrogen have been taken to indicate abnormal trends in adrenalectomized dogs.[5] These tests might be used clinically, together with sodium chlorid determinations as guides for ascertaining whether salt substitution or glandular therapy is indicated.*

Department of Pharmacology,
University of California.

HAMILTON H. ANDERSON and
ALFRED C. REED,
San Francisco.

1 Rubin, M. I., and Krick, E. T.: Effect of Adrenalectomy on Salt Metabolism in Rats, Proc. Soc. Exper. Biol. and Med., 31:228, 1933.

2 Loeb, R. F.: Effect of Sodium Chlorid in Treatment of a Patient with Addison's Disease, Proc. Soc. Exper. Biol. and Med., 30:808, 1933. Loeb, R. F., Atchley, D. W., Gutman, E. B., and Jillson, R.: On the Mechanism of Sodium Depletion in Addison's Disease, Proc. Soc. Exper. Biol. and Med., 31:130, 1933.

3 Harrop, G. A., Weinstein, A., Soffer, L. J., and Trescher, J. H.: The Diagnosis and Treatment of Addison's Disease, J. A. M. A., 100:1850, 1933.

4 Rogoff, J. M.: Addison's Disease, J. A. M. A., 99:1309, 1932.

5 Harrop, G. A., Pfiffner, J. J., Weinstein, A., and Swingle, W. W.: A Biological Method of Assay of the Adrenal Cortical Hormone, Proc. Soc. Exper. Biol. and Med., 29:449, 1932.

* With technical assistance of Miss T. Blumberg.

STATE MEDICAL ASSOCIATIONS

This department contains official notices, reports of county society proceedings and other information having to do with the state associations and their component county societies. The copy for the department is edited by the state association secretaries, to whom communications for this department should be sent. Rosters of state association officers and committees and of component county societies and affiliated organizations, are printed in the directories noted under Miscellany, on the front cover index.

CALIFORNIA MEDICAL ASSOCIATION

CLARENCE G. TOLAND.....President
ROBERT A. PEERS.....President-Elect
EMMA W. POPE.....Secretary-Treasurer

COMPONENT COUNTY MEDICAL SOCIETIES

CONTRA COSTA COUNTY

The fourth meeting of the year of the Contra Costa County Medical Society was held on Tuesday evening, April 10, at the Hotel Carquinez, Richmond.

The meeting was turned over to Dr. Harry Ford, who served as chairman of the evening. He made remarks apropos of the especial qualifications of the two guest speakers who had kindly consented to come from San Francisco. The first subject was *Headaches—Demonstrable by Eye Examination* by Dr. Warren D. Horner. This was a most practical and helpful paper. The second paper was by Dr. Louis Morrison on *Foreign Bodies in the Bronchi, and Their Removal.*

Application for membership into the society was received from Dr. W. C. Monteverde of Pittsburg. Motion was made by Doctor Ford and seconded by Doctor Powell that he be accepted. The motion carried, unanimously.

Doctor Stauffer announced that the next meeting would be held on May 8 at Pittsburg.

The meeting was adjourned at 11:20 o'clock, after which the customary buffet luncheon was served.

* * *

The fifth meeting of the year, a midsummer dinner meeting, was held on Tuesday evening, May 8, at the Los Medanos Hotel, Pittsburg, and was attended by thirty-six members of the Contra Costa Society and of the Auxiliary.

Doctor Stauffer introduced Mrs. Fernandez of Pinole, president of the Auxiliary, and Mrs. Kerns and Mrs. Stauffer, who reported briefly upon the activities at the State Medical Association convention, as observed from the point of view of the Auxiliary.

Dr. Selby Marks, chairman of the evening, presented Dr. M. L. Tainter of Lane-Stanford Clinic. His subject was the all-absorbing topic of *Dinitrophenol.* His talk gave the experimental data of the long laboratory period, with the final conclusions relative to patients, and the results which may reasonably be expected from the use of that drug.

CLARA H. SPALDING, *Secretary.*

HUMBOLDT COUNTY

The Humboldt County Medical Society held its May meeting on the evening of the 17th at the Hotel Vance. Dinner, at which twenty-three members and two guests, Dr. Nathan Hale and Dr. Harold Zimmerman of Sacramento, were present preceded the meeting.

Dr. O. R. Myers presided. Doctors Stegeman and Myers reported the activities of the State Medical Association meeting; also that Doctor Myers had won the Golf Tournament.

Doctor Wallace made a report on the possibilities of Insurance for our local society. Doctor Norman made a report on Medical Jurisprudence as pertaining to the Association.

The paper of the evening, given by Doctor Hale, on *Urological Problems,* followed, after which Doctor Hale also showed a 1000-foot film of South Sea pictures taken by him on a recent cruise.

The next meeting will be held on the afternoon and evening of June 21, and will be a joint meeting of the medical and dental societies. There will be golf in the afternoon. A 6:30 dinner will precede the evening meeting. The paper of the evening, by Dr. George W. Pierce of San Francisco, will be on *Reconstructive Surgery.*

LAWRENCE A. WING, *Secretary.*

MENDOCINO COUNTY

A regular meeting of the Mendocino County Medical Society was held at Ukiah on Wednesday, June 6, at 7 p. m., at the Saturday Afternoon Club House, Dr. Paul J. Bowman presiding. Before the regular program a joint dinner was held with the Woman's Auxiliary. Fourteen members of the Society and seven visitors were present.

Dr. William Voorsanger and Dr. Glenn Cushman of the Public Welfare League of California addressed the meeting on behalf of the Public Health League.

Following this it was agreed that a chapter of the Public Health League should be organized in Mendocino County. Dr. S. L. Rea was elected president, Dr. Paul J. Bowman, vice-president, and Dr. J. J. Kirwin, secretary.

The scientific program of the evening consisted of three reels of obstetrical films.

Upon the suggestion of Doctor Bowman, it was agreed that the next meeting would be held in Fort Bragg on some day in August.

RUDOLPH B. TOLLER, *Secretary.*

ORANGE COUNTY

The regular monthly meeting of the Orange County Medical Association was held at the James Café in Santa Ana at 7 p. m. The occasion was a dinner meeting honoring two charter members who are still members of the local organization. It also celebrated the forty-fifth anniversary of the Association.

The men so honored were Dr. C. D. Ball and Dr. J. P. Boyd. Doctor Violett acted as master of ceremonies, and in a brilliant speech paid suitable honor not only to these two men, but to the ladies of their families. Doctors Burlew, H. Johnston, and Maroon also paid tribute to these men.

Dr. Francis Findlay and Dr. C. Kohlenberger were unanimously elected to membership. The first reading of the application of Dr. Donald Abbott was heard.

Dr. C. D. Ball requested that the picture of the charter members, which now hangs in the attic of the library, be transferred to the Orange County Historical Society. On motion the request was granted.

Doctor Yeagle read a news item from the Santa Ana *Register* stating that Doctor Grover, D. C., was having a three-day clinic, and the chief chemist of the Mulford Company was to be present. The secretary was instructed to correspond with the Mulford Company to find out the details. The secretary read a communication from Gorden Bisel regarding a recent news item.

Dr. C. D. Ball read the obituary of Dr. Herbert Miller Robertson, who passed away on June 1. The

obituary was ordered filed with the minutes, and a copy sent to the State Association.

The scientific program of the evening was in charge of Dr. J. J. Montanaus, who presented a case of testicular tumor and demonstrated the autopsy findings.

WALDO S. WEHRLY, *Secretary.*

SACRAMENTO COUNTY

A regular meeting of the Sacramento Society for Medical Improvement was held on the evening of April 17 at the Elks Temple. The president, Dr. O. F. Johnson, called the meeting to order at 8:30 o'clock. Ninety-two members were present.

The paper of the evening, *Angina Pectoris and Coronary Occlusion,* was read by Dr. Harold P. Hill, clinical professor of medicine at the University of Stanford Medical School.

In the course of his paper he brought out four important facts. First, he pointed out history as most important. Angina is not a disease, but a symptom. Angina pectoris is due to sclerosis of the coronary arteries, but the lack of pain in certain cases when there is extreme sclerosis of these arteries cannot be explained. He compared the pain of coronary occlusion with that of angina pectoris. Coronary occlusion pain, he pointed out, lasts longer than one-half hour. Sometimes this pain is abdominal in type.

The second important fact is examination. A distant first sound is occasionally found. Many cases, however, show no change in heart sounds. He explained that an increase in heart rate is more common than a decrease in coronary occlusion. An increase in heart rate is a bad prognosis. A drop in blood pressure is fairly constant in coronary occlusion. Eight to twenty-four hours later these cases run a temperature of 100 to 103 degrees, and have a leukocyte count 12,000 to 18,000. Pericardial friction rub, most often heard in the nipple line, is almost pathognomonic and lasts a short time.

The etiology is unknown. Factors that cause these diseases are:

1. Arteriosclerosis.
2. Worry and fatigue.
3. Physical strain.

Some interesting cases were related.

The treatment does not consist of medicine altogether, but

1. Bed rest (one month to three months).
2. Nitroglycerin, which controls the substernal type of pain.
3. Bromids.
4. Digitalis in failing compensation and falling blood pressure.
5. Morphin, one-quarter grain, every fifteen minutes until relieved.
6. Oxygen if cyanotic. Best used only in a tent.
7. Theobromin with luminal.
8. Caffein and strychnin are the best heart stimulants.
9. Atropin sometimes is a life-saver when there is edema of the lungs.
10. Adrenalin, about one-half cubic centimeter, whenever necessary.

Appreciation for the paper was voiced by Doctors Peers, Gundrum, Reardan, Lindsay, Pulford, Empy of Roseville, Bert Thomas, and Scribner.

Announcements of the state and northern district meetings were made.

Doctor Hale gave a talk urging that members of the Society support the Chamber of Commerce of Sacramento.

* * *

A special meeting of the Sacramento Society for Medical Improvement was called to order by the president, Dr. Oscar F. Johnson, the evening of May 3 at the Elks Temple. Some 148 doctors were present, including many visiting physicians from northern California counties.

The paper of the evening, *Chronic Arthritis,* was delivered by Dr. Russell L. Cecil, associate professor of medicine at Cornell University. In his paper he discussed and differentiated osteo-arthritis and infectious arthritis. Doctor Cecil's paper was clearly illustrated by lantern slides. The paper closed with a discussion of the treatment which may be briefly outlined as follows:

A. Osteo-arthritis treatment:
   1. Make patient rest.
   2. Reduce weight. Low starch. Low sugars.
   3. Thyroid if basal metabolism is low.
   4. Massage. Not to be used in infectious forms.

B. Rheumatoid arthritis treatment:
   1. Mild sluggish early form (duration, six months to one year).
      (a) Remove foci of infection.
      (b) Rest treatment, as in tuberculosis.
      (c) Tonics (iron and arsenic).
      (d) Vaccine. Streptococcus vaccine, 50,000 intravenously in one dose.
      (e) Diet. Low starch and low carbohydrate. If patient is underweight, increase fat and protein. Vitamins A, B, C, and D.
      (f) Baths and heat.
      (g) Drugs. Gold thiocyanate may be good.
      (h) Elimination.
   2. Active febrile stage: Typhoid vaccine.
   3. Well established and old form: Sanatorium care.

The paper was discussed generally, and many questions were graciously answered by Doctor Cecil.

FRANK W. LEE, *Secretary.*

SAN JOAQUIN COUNTY

The regular monthly meeting of the San Joaquin County Medical Society was held in the Medico-Dental clubrooms on June 7. The meeting was called to order at 8:30 p. m. by Dr. P. B. Gallegos.

The applications for membership in the San Joaquin County Medical Society of Doctors G. C. Richardson of Sonora and E. W. Thomas of Stockton were read and referred to the Admissions Committee for their action.

Dr. Dewey Powell reported on a meeting held between the Public Relations Committee and a committee from the Woman's Auxiliary of the San Joaquin County Medical Society concerning the advisability of medical broadcasts. He stated that the Woman's Auxiliary wished to have a series of broadcasts in conjunction with the Parent-Teacher Association and the School Board, and requested that the society give the Public Relations Committee authority to formulate plans and work with the Woman's Auxiliary; and that these plans be presented to the Medical Society at the September meeting before any definite action is taken. The request was granted.

The scientific program of the evening was opened by Dr. William R. Rogers, who spoke on the *Surgical Treatment of Pulmonary Tuberculosis.* Doctor Rogers demonstrated several cases and illustrated his talk with x-ray pictures. The paper was discussed by Dr. T. C. O'Conner. The second paper of the evening was given by Dr. William Faber of San Francisco, who discussed *Recent Developments in Poliomyelitis.* This was discussed by Doctors Sippy, True, City Health Officer of Sacramento; Powell, County Health Officer of Contra Costa County; D. Powell, P. Dieffenbacher, S. F. Priestley, F. J. Doughty, Satour of Sacramento, Sanderson, Chapman, and Barnes.

Dr. Dewey Powell delivered a eulogy on Dr. L. R. Johnson. Dr. W. W. Fitzgerald also spoke on the death of Doctor Johnson, and moved that the society be adjourned in his honor.

The meeting was adjourned at 11:30 and refreshments were served.

G. H. ROHRBACHER, *Secretary.*

SANTA BARBARA COUNTY

The regular monthly meeting of the Santa Barbara County Medical Society was held on June 11 in the Bissell Auditorium of the Cottage Hospital.

This was a joint meeting of the County Medical Society and the Woman's Auxiliary of the County Medical Society.

The president, Doctor Markthaler, presided at the meeting and introduced the speaker of the evening, Dr. George Parrish, health officer of Los Angeles City. Doctor Parrish gave a most interesting talk on *The Conquest of Disease.*

At the conclusion of the meeting the ladies met in an adjoining room, and the county society went into executive session.

Doctor Gray reported for the Committee on Medical Economics and the Costs of Medical Care.

After discussion by various members of the society, it was moved, seconded and unanimously carried, that the report be adopted. Regarding the appointing of a governing board, it was moved, seconded and carried, that this same Committee on Medical Economics and the Costs of Medical Care be appointed the governing board, with power to administer the affairs of the Bureau, to review cases regularly, and to receive and dispense moneys incident to the operation of the Bureau; Doctor Gray to be chairman of the Board.

Doctor Markthaler reported that a new social worker had been obtained for the county dispensary.

It was moved, seconded and carried, that the county society take a vacation from regular meetings until September. WILLIAM H. EATON, *Secretary.*

SOLANO COUNTY

The regular monthly meeting of the Solano County Medical Society was held at the Hotel Casa de Vallejo on Tuesday evening, June 12, at eight o'clock.

This meeting was held jointly with the members of the Contra Costa County Medical Society. Forty-two members and guests of both societies attended. The meeting was preceded by a dinner.

Immediately following the dinner, Dr. William C. Voorsanger of San Francisco, president of the Public Health League of California, spoke on the functions and activities of this organization and strongly urged a 100 per cent membership in both counties.

Dr. Edward A. Peterson, city health officer in Vallejo, led a discussion on poliomyelitis. This topic was especially timely because of the fact that there are a number of suspicious cases of poliomyelitis in this section of the state. Doctor Peterson outlined the work that should be done in the event of any outbreak of the disease. His remarks were supplemented by Dr. Dwight Murray, city health officer of Napa, and by Dr. Harry Oliver of San Francisco.

The society went on record as wishing to coöperate 100 per cent with local and state health societies in the prevention of any outbreak of poliomyelitis. A committee, consisting of Dr. Edward A. Peterson (chairman), Commander C. W. Ross of the Mare Island Naval Hospital, Doctors Robert Dempsey, D. B. Park and A. J. Ryan of Vallejo, and Dr. S. G. Bransford of Suisun, was appointed on the problem of poliomyelitis to assist in stamping out any outbreak of this disease in Solano County.

Dr. P. B. Fry of Benicia, Solano County delegate to the State Medical Association convention at Riverside, gave a complete report, which was well received by the members.

The first speaker on the stated program of the evening was Dr. William C. Voorsanger of San Francisco, who spoke on *Tuberculosis in Children.* He stressed the early diagnosis and treatment of tuberculosis in youngsters, and illustrated his lecture with lantern slides.

Dr. Fred R. Fairchild, chief surgeon of the Woodland Clinic, presented the second paper of the evening, on *Appendicitis.* In his talk Doctor Fairchild gave a critical analysis of some one thousand cases of appendicitis at the Woodland Clinic, stressing the results and clinical lessons learned from this vast number of cases. His talk was, likewise, supplemented by lantern slides of interesting facts and figures in connection with the critical analysis.

Following the delivery of these papers there was considerable discussion by the members.

Special guests of the evening were: Dr. James J. Hogan, retired physician in Vallejo and one of the oldest members of the Solano County Medical Society; Doctors Judson Sale, Victor Dillon, Harry Oliver and M. Wayburn of San Francisco, and Doctor Railsback of Woodland.

On Tuesday evening July 10, the members of the Solano and Napa County Medical Societies will hold a joint dinner meeting at the Napa Country Club. Doctors Edmund Butler and Howard Naffziger of San Francisco will be the guest speakers of the evening.

AMBROSE J. RYAN, *Secretary.*

SONOMA COUNTY

The Sonoma County Medical Society held its June meeting at the El Camino Restaurant in Santa Rosa on the 14th. Thirty-five members were present.

Dr. W. E. Carter of the University of California Hospital told of the services offered to the medical profession of the state at that institution.

Dr. Howard Fleming of San Francisco gave an illustrated paper on the *Early Recognition of Cord and Brain Tumors.*

Dr. Alson R. Kilgore of San Francisco spoke upon the subject, *Things Confronting the Medical Profession.* It was a wonderfully fine program, and approved by all present. Considerable discussion followed.

Dr. D. J. Mahan of Santa Rosa was voted a retired membership in the society. A committee was appointed, with one representative in each town to keep the medical profession posted on the poliomyelitis situation. W. C. SHIPLEY, *Secretary.*

TULARE COUNTY

The Tulare County Medical Society held its monthly meeting at Motley's Café on May 20.

Dr. Charles M. Matthias of Tulare was unanimously elected to membership in the society.

Dr. Elmo Zumwalt, Tulare County Health Officer, brought up the subject of vaccination and diphtheria immunization for discussion. He reported the activities of the Tulare County Parent-Teacher Association in the diphtheria immunization campaign of 1933, and said that at the present time the Parent-Teacher associations have come to him to consider the feasibility of smallpox vaccination by a similar campaign method. Doctor Zumwalt asked for comment. General discussion followed by the members in attendance. Almost unanimous objection was raised against such a county-wide program of free public clinic vaccination.

Doctor Lipson made a motion that the society appoint a committee to confer with the city and county health officers to work out a plan for vaccination. This was seconded by Doctor Guido, and carried. Doctor Fowler appointed Doctors Lipson and Guido to report on this matter.

Dr. Frank Kohn made a report of his attendance as a delegate to the 1934 California Medical Association convention at Riverside. He gave an interesting account of the discussions in the House of Delegates and submitted the report of a proposed plan of hospital insurance.

Dr. Ray Rosson gave a brief report on a few of the scientific papers which interested him most, including one on *Industrial Back Injuries* and Chester Rowell's address on *Social Insurance.*

Dr. Edgar Brigham of Dinuba gave an interesting and instructive paper, illustrated by lantern slides, on *General Principles of Hydrotherapy.* He discussed methods of application and physiological effects of heat and cold applied to various parts of the body. It was followed by a general discussion, including some examples of the clinical application of hydrotherapy. KARL F. WEISS, *Secretary.*

CHANGES IN MEMBERSHIP

New Members (39)

Alameda County.—Anah C. Wineberg.

Los Angeles County—

Claire N. Brownsberger
Cyril B. Conrville
Ralph G. Dryer
John O. Eiler
W. L. Halverson
P. F. Haskell
Sara M. Kiser
Romeo J. Lajoie
Neil H. Lewis
Donald S. MacKinnon
Samuel M. Marcus
William A. Marmor
Orvie D. McCartney
Fred C. Nichols
Paul Nilsson
Shigeichi Okami
John B. Peterson
Maurice N. Rosenberg
Yudell K. Slocum
Egberg C. Stratford
James E. Thompson

Orange County.—Francis M. Findley, Charles F. W. Kohlenberger.

San Bernardino County.—Harold R. Miller.

San Francisco County.—Elizabeth Arthurs, Alexander B. Bigler, Samuel F. Boyle, Marius A. Francoz, David O. Harrington, Albert L. Leveton, Carleton Mathewson, Jr., Clayton D. Mote, Newton H. Shapiro.

San Joaquin County.—Verne R. Ross.

Santa Clara County.—August Reich, Ethel Mae Shaull.

Siskiyou County.—James B. McGuire, Harry R. McVicker.

Transferred (7)

C. S. Ambrose, from Los Angeles County to Illinois.

Joseph W. Dassett, from Los Angeles County to Merced County.

Vincent P. Flynn, from Los Angeles County to Alameda County.

Richard B. McGovney, from Los Angeles County to Santa Barbara County.

H. C. Morrison, from Los Angeles County to Oklahoma.

Richard K. Pierce, from Los Angeles County to Alameda County.

George T. Pomeroy, from Los Angeles County to Napa County.

Resigned (1)

Arthur Perkins, from Alameda County.

In Memoriam

Conrad, Alexander Holland. Died at Val Verde, May 10, 1934, age 34. Graduate of the University of Michigan Medical School, Ann Arbor, 1932, and licensed in California the same year. Doctor Conrad was a member of the Riverside County Medical Society, the California Medical Association, and the American Medical Association.

✝

Holmes, Thomas Blakeney. Died at Oakland, May 12, 1934, age 68. Graduate of the University of California Medical School, 1894, and licensed in California the same year. Doctor Holmes was a member of the Alameda County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

Jacobs, William Roscoe. Died at Sacramento, May 20, 1934, age 48. Graduate of Cooper Medical College, San Francisco, 1910, and licensed in California in 1911. Doctor Jacobs was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

Johnson, Llewellyn Roberts. Died at San Francisco, May 26, 1934, age 52. Graduate of Cooper Medical College, San Francisco, 1903, and licensed in California the same year. Doctor Johnson was a member of the San Joaquin County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Lockwood, Sheridan Alfred. Died at National City, May 29, 1934, age 60. Graduate of the American Medical Missionary College, Chicago, 1900. Licensed in California in 1901. Doctor Lockwood was a member of the San Diego County Medical Society, the California Medical Association, and the American Medical Association.

✝

Richards, Robert Lewis. Died at Montecito, May 26, 1934, age 65. Graduate of the Medical College of Ohio, 1894. Licensed in California in 1901. Doctor Richards was a member of the Santa Barbara County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Robertson, Herbert Miller. Died at Santa Ana, June 1, 1934, age 61. Graduate of Atlantic Medical College, Baltimore, 1897. Licensed in California in 1901. Doctor Robertson was a member of the Orange County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

Ryfkogel, Henry Anthon Lewis. Died at San Francisco, June 11, 1934, age 61. Graduate of the University of California Medical School, 1894, and licensed in California the same year. Doctor Ryfkogel was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Wagner, Carl Richard. Died at Pasadena, June 8, 1934. Graduate of Rush Medical College, Chicago, 1921. Licensed in California in 1927. Doctor Wagner was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

Wallace, Edward Lee Roy. Died at Los Angeles, June 7, 1934, age 59. Graduate of the California Eclectic Medical College, Los Angeles, 1897, and licensed in California the same year. Doctor Wallace was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

OBITUARIES

Robert Lewis Richards
1869-1934

In the small hours of the morning of May 25, Robert Lewis Richards died in Los Angeles, in his sixty-fifth year.

Born at New Lexington, Ohio, December 10, 1869, the son of Dr. Alva and Katherine Huston Richards, he was educated at Delaware University and received his medical education at the Medical College of Ohio, in Cincinnati, graduating with the class of 1894. In 1900, he married Marie B. Hatton.

He soon interested himself in the study of neuropsychiatry and worked extensively under such masters as Oppenheim in Berlin, Kraepelin in Munich, and Jung in Zurich. In 1902, he returned to enter the United States Army, induced by his interest in the psychiatric cases of the soldiers returning from the Philippines, and was the first officer to introduce psychiatry into the medical department of the United States Army at St. Elizabeth's Hospital in Washington, D. C. He later inaugurated the psychiatric service at San Francisco Presidio, and served in the Philippines and Cuba, resigning in 1912 to accept the superintendency of the Mendocino State Hospital where, during the late war, he again served, supervising the psychiatric service on the Pacific Coast and training members of the medical corps at Mendocino prior to their assignment to active duty.

From 1921 to 1930 he practiced privately in San Francisco and Oakland, in the latter year being appointed physician in charge and consultant to Mr.

Stanley McCormick in Santa Barbara, in which service his last illness overtook him. Interment will be at Arlington, Virginia, in the National Cemetery.

Doctor Richards was capable, honest, a gentleman. The medical profession of California has lost an outstanding member, the people, a valued servant.

WILLIAM H. STRIETMANN, M. D.

✝

Herbert Miller Robertson
1873-1934

Doctor Robertson, for many years in active practice in Santa Ana, after a lingering illness passed away on June 1, 1934. He was born in Glasgow, Scotland, April 22, 1873, and educated in the public schools of Manchester, England, and in the University of Glasgow, Scotland. He received his degree of doctor of medicine from the Southern Medical College, Baltimore, Maryland, in 1897, and engaged in a general practice in Detroit till 1901.

In 1894 he married Mary L. Baldwin; she and four daughters survive him.

He brought his family to Riverside that same year, and there remained until 1909, when Santa Ana became his home. While in Riverside he served as county physician four years, 1905-1909.

Doctor Robertson obtained his California license to practice in 1901. Shortly after coming to Santa Ana he was admitted to the Orange County Medical Association, of which he was president in 1930. He was a member of the California Medical Association and a Fellow of the American Medical Association.

During the Great War he served as examining physician on the Santa Ana Draft Board. On April 8, 1926, he was appointed on the Board of Medical Examiners for the State of California and reappointed in 1930, showing that his work there was fully appreciated. At one time he was president of the Southern California Homeopathic Medical Society.

With the passing of Doctor Robertson the profession lost a brilliant, energetic worker who will be greatly missed by his family and his many patients and friends.

C. D. BALL, M. D.

C. M. A. DEPARTMENT OF PUBLIC RELATIONS*

The Growth of Free Medical Care in San Diego Since 1920†

By J. TERRELL SCOTT, M. D.

San Diego County maintains the following principal divisions dealing in the treatment and prevention of disease:

1. County Hospital Main Building.
2. Vauclain Tuberculosis Sanitarium.
3. The Psychopathic Hospital.
4. The Neighborhood House, serving chiefly a Mexican population.
5. The Tuberculosis Dispensary.
6. The Venereal Clinic.

The first three divisions are under the supervision of the superintendent of the County Hospital; the other divisions are under the supervision of the Director of Public Health. In addition there are four permanent Child Hygiene Conference Centers in the Euclid, Fremont, Stockton, and Washington School Districts, supervised by the Director of Public Health; and there is the medical division of the City Police Department handling emergencies.

My purpose is to trace the growth of these institutions and to estimate the proportion of the population of the county being served by the free clinics of the county.

The most important division in the number of cases treated is the County Hospital, which handled in 1933 about 80 per cent of the people served by the county clinics. The statistics available for the out-patient department of the County Hospital are accurate back to the year 1921, and from the figures available for September, 1920, when 528 cases were treated, the number of cases treated in 1920 can be closely estimated. The admissions to the County Hospital, including Vauclain Home, are available back to 1924, when 3,564 admissions are reported. In December, 1920, there were 140 admissions from which the figures for the year 1920 may be estimated. The Psychopathic Hospital was added in the fiscal year 1926-27.

From this data the following figures are given, the year 1920 being estimated:

Fiscal Year	Hospital	Emergencies (e)	Out Patient Dept.*	Total Patients (e)
1920	2,000 (e)	1,100	8,000 (e)	4,900
1921	2,700 (e)	1,500	11,451	6,720
1924	3,564	2,500	14,253	8,750
1927	6,337	2,600	13,160	10,867
1930	7,206	3,800	26,731	16,582
1933	7,640	4,200	33,868	19,480
1934 (e)	8,000	4,400	34,000	19,944

e—estimated. *—calendar year.

In estimating the total number of patients treated allowance has been made for cases treated in both the out-patient department and the hospital to avoid a duplication of figures—about one-third of the hospital cases come through the clinic. The emergency and clinic figures represent treatments and not patients and these figures have been divided by three, as it is estimated that the average number of calls per patient is around three. We note that the increase in the number of hospital cases has been held down since 1930, and the patients shifted to the out-patient department.

The County Venereal Clinic was started in 1919. In 1933 there were 1,059 new cases treated and 1,610 persons were treated in all. There were 5,721 treatments given—an average of over twenty a day. This clinic has increased enormously since 1923 when approximately one-fifth as many cases were treated. There were 219 new cases in 1923 compared with 1,059 in 1933.

Immunization was started by the Health Department in 1926, and in the following six years the Department did 20,000 immunizations. In 1932, 5,900 immunizations were accomplished.

Neighborhood House was started in 1912, and reports the following cases treated for 1932:

Gynecology cases	821
Sick babies	1,454
Prenatal clinic cases	292
First aid treatments	1,204
Emergency visits	1,285
Tonsillectomies	105
Total cases	5,161

Assuming that the average patient will call three times during the illness, this represents a health service to approximately 1,700 individuals. One-half of the persons served have been Mexican and negro.

The Tuberculosis Dispensary was started in 1908. The number of cases treated has shown a marked increase during the past four years—estimated at close to 100 per cent. According to the nurse in charge, the number of cases now being treated is about the same as last year, and has shown no noticeable increase for the past four months. In 1932, 1,863 individuals attended the clinic, of whom 1,536 were examined, 933 were referred to the County Hospital and 89 children were sent to the children's preventorium. The number of cases seen who were *not* sent to the County Hospital was 930.

The estimated number of individuals treated by these three divisions of the Public Health Department is as follows—the 1932 figures are closely estimated, the 1920 and 1934 figures are roughly estimated:

	1920	1932	1934
Venereal clinic	250	1,610	1,800
Neighborhood house	500	1,700	1,900
Tuberculosis dispensary (not referred to county hospital	350	930	950
Total	1,100	4,240	4,650

* An open forum for progress notes on the department's activities and for brief discussions on medical economics. Correspondence and suggestions invited. Address Walter M. Dickie, Room 2039, Four Fifty Sutter Street, San Francisco. This column is conducted by the Director of the Department.

† Read before the San Diego County Hospital staff May 22, 1934.

The estimated number of individuals served by both the County Hospital and the Public Health Department may now be combined and the following table presented—an estimate sufficiently accurate for the purpose of comparison, even though the fiscal year for the County Hospital ends June 30 while the statistics from the health department are for the calendar year.

ESTIMATED NUMBER OF INDIVIDUALS TREATED

	County Hospital	Health Department	Total*
1920	4,900	1,100	5,890
1924	6,720	1,800	8,340
1927	10,867	2,600	13,207
1930	16,582	3,450	19,687
1934	19,944	4,650	24,125

* After deducting 10 per cent from Health Department figures to allow for duplication.

The population of San Diego County in 1920 was 112,282, and by 1930 the population had increased 95 per cent to 209,659. According to the statisticians of the San Diego Consolidated Gas and Electric Company, there has been no noticeable increase in the population since 1930. However, from 1930 to 1934 the average daily attendance at the city schools of San Diego increased from 22,373 to 25,470 or 14 per cent. The population of the city of San Diego for 1930 was 147,995 and the population of the adjoining cities of Coronado, La Mesa, National City, Chula Vista and El Cajon was 20,158, giving Metropolitan San Diego a population of 168,153 compared to 83,957 in 1920, an increase of 100 per cent. The estimated population for 1934 is 190,000.

NUMBER OF NAVAL DEPENDENTS

What proportion of the civilian population of Metropolitan San Diego are naval dependents? This is a difficult question to answer, and only an approximation of the number of naval dependents residing in San Diego can be given. The following estimates were obtained from the Eleventh Naval District Commandant's office, from the clerk of the Commissary Store, from the head of the out-patient department of the United States Naval Hospital, and from the San Diego Chamber of Commerce. There were on January 1, 1934, 20,000 enlisted men in the Navy stationed in San Diego, two-thirds of whom are stationed on boats in the harbor. Probably 25 per cent of these men are married and have their families residing in San Diego. Assuming such to be the case, and an average of 3.3 individuals per family, this would mean 16,500 people. In addition there are over one thousand retired naval men with families, representing about 3,500 people. These, together with 15,000 unmarried men, represent a population of 35,000. The commissary department estimates from the number of requisition cards issued, a population of 30,000. It is thought that over 3,000 homes and apartments are rented by navy men in San Diego proper. It is safe to conclude that at least 20,000 civilians residing in San Diego are naval dependents, or are dependents of navy men now retired. These residents are included in the 1930 census figures but are taken care of by the United States Naval Hospital and the Navy physicians. Subtracting these figures from the population of Metropolitan San Diego will leave a civilian population of 170,000 who are cared for by the county and the private physicians. It is difficult to arrive at a corresponding figure for 1920. However, the active personnel of the Navy on Shore Duty in the San Diego district for 1923 is given as 3,646, compared to 6,300 January 1, 1934. The active personnel was probably around 7,500 men in 1920, or approximately 40 per cent of the present number.

For the purpose of comparison we may estimate roughly that the number of naval dependents residing in San Diego in 1920 was about 8,500, which, subtracted from the 1920 population, will leave a population of about 75,500 civilians cared for by the county and the private physicians.

THE NORMAL INCIDENCE OF SICKNESS

What is the incidence of sickness in the average community? How many are sick at a given time and how many will be sick during the year? According to the studies of the Committee on the Cost of Medical Care, 2 per cent of the population are sick all the time, and the average illness lasts 8.3 days. (Peebles '29.) Sydenstricker made a survey of illness for the town of Hagerstown, Maryland, in 1921. According to his report, 3.2 per cent of the wealthy and 4 per cent of the poor were ill during the month of December, 1921, out of 1,800 households. For the three years 1921, 1922 and 1923, there was an average of 5,740 cases of illness of three days or more duration among a population of 29,000. This represents 20 per cent of the population. If all illnesses of one or more days are taken, probably 25 per cent of the population would be affected.

Assuming such to be the case, the number of people being cared for medically by San Diego County represents 25 per cent of those eligible. The following figures show the estimated number of people who, when ill, will attend the county clinics, from Metropolitan San Diego and the ratio this leaves to the civilian population other than naval dependents.

Year	Total Cases Treated (25% of those eligible)	No. of Residents Eligible from Metropolitan San Diego*	Population of Metropolitan San Diego (other than naval)	Percent Having Free Medical Care
1920	5,890	22,380	75,500	30%
1924	8,340	31,700	.....	.....
1927	13,207	50,200	125,000	40%
1930	19,687	74,600	148,153	50%
1934	24,129	91,670	170,000	54%

* Five per cent has been deducted for the population served for outlying districts of the county.

In 1920 it is estimated that 30 per cent of the population of Metropolitan San Diego, *other than naval,* was being served by the county clinics, 7½ per cent of the population being actually treated for illness. By 1934 it is estimated that 54 per cent of the population is being served by the county.

CLINICS OTHER THAN COUNTY CLINICS

Mercy Hospital, which is the largest private hospital in the county, started a part-pay clinic in January, 1933. A charge of 50 cents is made per visit, the hospital retaining one-half. For the year 1933 there were 456 visits to the clinic made by approximately 150 individuals. The Mercy Hospital Clinic, which is practically a charity clinic, is thus drawing from about 600 residents.

The Central Clinic was started in January, 1933. It is not a treatment clinic, but a central bureau for social service investigation and for referring patients to the private physicians, the hospitals and the clinics with recommendations as to fees. For the year 1933 the Central Clinic referred 617 cases to physicians on a part or full pay basis.

If we estimate that these patients pay an average of 50 per cent of the full fee, then this plan would be equivalent to a loss of 308 cases by the private physicians of the county drawing from 1,234 people.

NUMBER OF PEOPLE PER PHYSICIAN IN PRIVATE PRACTICE

The number of registered physicians in San Diego County in 1921 was 251. In 1925, 296, and in January, 1934, 402. The estimated number of physicians for 1920 is 240. At the present time 11 per cent of all registered physicians are residing in the outlying districts, and 89 per cent in the metropolitan district. Assuming these proportions to have held in 1920, we have:

Year	Registered Physicians in Metropolitan San Diego	Residents not Eligible to County or Federal Aid	Residents Per Physician
1920	216	53,100	246
1934	376	78,330	200*

* After deduction of 600 on account of Mercy Hospital Clinic, and 2,500 representing those served by the Central Clinic.

The classification of the people in Metropolitan San Diego, according to the medical service received,

or rather their eligibility for receiving such service, may now be estimated as follows:

	1920		1934	
Served by County Hospital and Public Health Department (of whom 18,640 were receiving county and state aid January 20, 1934)	25.5%	22,400	92,000	46. %
Resident naval personnel including dependents	10. %	8,500	20,000	10. %
Non-resident naval personnel (floating)	4.5%	4,000	10,000	5. %
Served by Central Clinic	.....	.....	2,500	1.2%
Served by Mercy Hospital Clinic	.....	.....	600	.3%
Served by private physicians on full-fee basis	60. %	53,100	75,000	37.5%
Total	100. %	88,000	200,100	100. %

CONCLUSIONS

1. The resident population of Metropolitan San Diego has increased from 1920 to 1934 from 84,000 to 190,000 (126 per cent).

2. The number of registered physicians in the same period has increased from 216 to 376 (75 per cent).

3. The number of residents cared for by the county has increased within the same period from 22,000 to 92,000 (420 per cent); these figures being an estimate.

4. As a result of this enormous increase of free medical care by the county, the per cent of the total population supporting the private physicians has declined in the past fourteen years from 60 per cent to 38½ per cent.

5. Most of the increase in the use of free county clinics has occurred before the present economic depression—the rate of increase has been less since the depression than it was preceding the depression.

SOURCES OF INFORMATION

Report of the superintendent of the San Diego Hospital, 1933.

The files of the San Diego County Hospital outpatient department.

Annual report of Public Health Department of San Diego, 1932.

Sydenstricker, "The Extent of Medical and Hospital Service in a Typical Small City," Public Health Reports, Vol. XLII, No. 2.

Sydenstricker, "Economic Status and the Incidence of Illness," quoted in *Monthly Review*, November, 1929.

Commandant's Office, Eleventh Naval District.

San Diego city schools—superintendent's office.

San Diego County Welfare Commission.

—*Bulletin of the San Diego County Medical Society*, June 1, 1934.

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

MRS. PHILIP SCHUYLER DOANE .....President
MRS. ELMER BELT.....Editor and Chairman of Publicity

The Annual Election.—For the year 1934-1935 the officers and directors of the Woman's Auxiliary to the California Medical Association elected at the annual convention held at Riverside this May are: President, Mrs. Philip Schuyler Doane of Pasadena; president-elect, Mrs. Thomas J. Clark of Oakland; first vice-president, Mrs. William H. Sargent of Oakland; second vice-president, Mrs. Charles E. Howard of San Diego; recording secretary, Mrs. H. E. Henderson of Santa Barbara; corresponding secretary, Mrs. H. Waldo Spiers of Los Angeles; treasurer, Mrs. Frederick N. Scatena of Sacramento.

Mrs. John V. Barrow of Los Angeles, Mrs. Frank Baxter and Mrs. Robert T. Sutherland, both of Oakland, and Mrs. Arthur W. Walker of Riverside are the four councilors-at-large, and Mrs. William H. Newman of San Diego, Mrs. Elmer Belt of Los Angeles, Mrs. Charles Stevens of Santa Barbara, Mrs. Percy B. Gallegos of Stockton, Mrs. U. S. Abbott of Richmond, Mrs. J. Howard Hall of Sacramento, and Mrs. Raymond Babcock of Willits are the seven district councilors.

* * *

Helen Doane Membership Trophy.—At the luncheon given in her honor in the patio of the Mission Inn on the closing day of the convention the incoming president, Mrs. Philip Schuyler Doane, presented to the State Auxiliary a fine, silver trophy in the form of a large vase. This is to be awarded annually to the county auxiliary making the greatest pro rata gain in membership during the year. To Santa Barbara County goes the honor of the first victory and to Mrs. John Van Paing, its presiding officer, the trophy was given to have and to hold until next May. At the 1935 convention, which is to be in Yosemite, membership lists will again be tallied and the award made.

* * *

New State President Honored.—Not only the members from the far corners of her own county, but those from three other counties as well, came to the Midwick Country Club on a fine May day, the 22nd, to the celebration in honor of Mrs. Philip Schuyler Doane, president of the Woman's Auxiliary to the California Medical Association. Mrs. Doane's own city, Pasadena, and its near neighbor, South Pasadena, were hostesses for the day, with Mrs. Harry Markoff in charge of arrangements. Mrs. John V. Barrow, the Los Angeles County president, presided at the speaker's table, and had invited for the occasion the presidents of the outstanding women's organizations of the city.

The dining room and all the adjacent sun rooms of the Midwick were filled with tables and merry guests for the luncheon. Mrs. Barrow presided with friendly dignity, and in a clear-cut speech outlined the aims of the Auxiliary for the benefit of the many new guests there, and then introduced them and the officers to the assembled members. Mrs. Louise Ward Watkins spoke with clarity and force upon some pressing civic problems. Mrs. B. S. Lewis told of her impressions of this, her first, contact with our organization and of our president's "million-dollar" personality. Mrs. F. E. Coulter, long a close friend and co-worker, paid a fine, warm tribute to "Helen Doane of Pasadena." Mrs. James F. Percy lighted up the past with a few minutes on the perils of pioneering days in the Auxiliary, and predicted a promising future under Mrs. Doane's leadership. Two of the Auxiliary daughters made a bow, Miss Mildred Schwuchow, whose harp selections added so much enjoyment to the program, and Dolly Doane Hubbard, the lovely daughter of the president, who describes her as her chief accomplishment. Among the messages of greetings and congratulations was a telegram from the state treasurer, Mrs. Frederick N. Scatena of Sacramento. Mrs. Barrow called last upon the guest of honor, who stood through a cheering burst of applause before she could be heard in her sparkling and apt replies to the tributes paid her.

In the afternoon there were cards, conversation and conferences in the clubhouse, and swimming outdoors in the big, blue pool. As the guests left they wished Mrs. Doane and her fellow traveler, Mrs. Percy, a happy trip to the National Auxiliary, which convenes with the American Medical Association at Cleveland

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. A. Elmer Belt, chairman of the Publicity and Publications Committee, 2200 Live Oak Drive, Los Angeles. Brief reports of county auxiliary meetings will be welcomed by Mrs. Belt and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxiliary notes.

in June. The entire membership looks forward with interest to the report of the convention upon their return.

* * *

Kern County Organized. — It is a real pleasure to announce the formation of a new unit, the Woman's Auxiliary to the Kern County Medical Society. Mrs. N. N. Brown of Bakersfield, widely known and greatly loved, was responsible for bringing together the fifteen charter members who compose this, the eleventh and youngest of our county societies. President Doane and Past President Coulter made the trip to Bakersfield the last of May and properly initiated the new pledges. The Kern County group have already given proof of their worth in a fine, constructive piece of work concerning their county hospital bonds, a detailed report of which will appear, we hope, in a later issue. We welcome you, Kern County, and wish you well.

* * *

Component County Auxiliaries

Contra Costa County. — The May meeting of the Woman's Auxiliary to the Contra Costa County Medical Society was a joint meeting with the medical society in the form of a dinner at the Las Medanas Hotel in Pittsburg. Mesdames Manuel Fernandez, Melvin Stauffer, and C. L. Kerns gave interesting and enlightening reports of the state convention in Riverside. After these Dr. Melvin Stauffer introduced Doctor Tainter of Stanford University, who gave a very instructive and comprehensive treatise on the drug alpha dinitrophenol. Helen Weil, *Secretary.*

* * *

Los Angeles County.—At the suggestion of the Public Health League, the Los Angeles County Auxiliary is carrying out two projects which, it is believed, will be of help in contests concerning medical legislation. The first is the division of all the doctors of this county into their assembly districts so that when need arises the informed opinion of the profession on measures vitally affecting public health and welfare can be made known to the elected legislators from these districts. This work is already complete due to the energetic efforts of Mrs. Ferris W. Thompson and her committee. The second project, made more simple because of the listing just done, is the telephoning of every doctor's home and office to urge the registration of each eligible voter there.

The Huntington Park members were hostesses at a delightful tea at the home of Mrs. Owen Moore last month, and at that time the necessity of a clear understanding of the narcotic situation in the state, especially in reference to the Harrison Drug Act, was put forward by Mrs. James F. Percy.

Ever since the busy days of Red Cross work in 1917 a small group, headed by Mrs. Herman Zeiler and Mrs. Philip Stevens, has devoted an afternoon a month in sewing for one of the day nurseries here. Because many of our members are interested, it was agreed to form a sewing unit, limited to them, and to continue this welfare work under the Auxiliary's sponsorship. These informal gatherings are held in the homes and limited to fifteen. If the desire grows, other units are to be formed among friends who enjoy an afternoon of congenial work together and in serving a good cause.

Our president, Mrs. John V. Barrow, reports that the campaign for collecting cod-liver oil samples was surprisingly successful, and that these are being distributed among needy children through the Parent-Teacher Association and, also, that the *Hygeia* subscriptions of our county have now topped the quota for the entire state.

The regular May meeting, the luncheon honoring Mrs. Doane, is reported elsewhere in this issue.

Mrs. Elmer Belt, *Corresponding Secretary.*

Orange County. — The Auxiliary to the Orange County Medical Association met Tuesday afternoon, June 5, at the Pacific Coast Club, in Long Beach, as guests of Mesdames D. C. Cowles, Claude Steen, E. J. Steen, and Ray Green of Fullerton and C. G. Curtiss of Brea.

During the business session preceding the program of the afternoon, the following correspondence was read which had to do with subjects of special interest at this particular time. A letter from Mr. Ben Read urged that we, as an organization, see that all doctors of our community and those of their families that are eligible be registered to vote. A letter from our state president was read asking us to coöperate in this matter and suggesting that a committee be formed for this purpose. Mrs. Ray Green, chairman of the Committee on Public Relations, read a letter from Dr. K. H. Sutherland of the County Health Department giving us a report on the poliomyelitis situation in Orange County. In his report Doctor Sutherland included the substance of a recent bulletin from the State Board of Health telling of a prophylactic treatment for poliomyelitis suggested by Dr. William H. Park of the New York City Health Department, an authority on poliomyelitis.

Mrs. D. R. Ball, program chairman, introduced as speaker of the afternoon Dr. Fred B. Clark, chairman of the Committee on Health and Public Instruction of the California State Medical Association. He gave a most interesting and instructive talk on *Compulsory Health Insurance.* Doctor Clark explained the situation which makes necessary some form of health insurance. He told of the Senate committee formed to find a solution for the cost of medical care, which is too high for the great majority. Doctor Clark emphasized the difficulty, and also the importance of keeping the matter out of politics.

On conclusion of the business session and program, the members were entertained during the tea hour by a delightful musical program.

Elizabeth M. Sutherland, *Secretary.*

* * *

Sacramento County. — The regular meeting of the Woman's Auxiliary to the Sacramento Society for Medical Improvement was held the third Tuesday in May, the 15th. As this was the last meeting of the year, it was largely social and was in the form of a bridge luncheon. A very short business meeting was held, with the president, Mrs. Howard Hall, presiding. Mrs. A. M. Henderson, past state president, Mrs. F. M. Scatena, state treasurer, and Mrs. Junius B. Harris, local delegate, all gave reports of the state convention at Riverside. Luncheon was served at a new tea room about seven miles out of Sacramento, at Sommervilla, where the food is excellent and the garden lovely with flowers. About forty members were present and remained to play bridge afterward.

At the state convention Mrs. Scatena, Mrs. J. B. Harris, and Mrs. J. Ray Jones were elected as state delegates to attend the national convention in Cleveland, June 11 to 15, 1934. At this writing all have left for the convention. Mrs. Frank P. Brendel,
Corresponding Secretary.

* * *

San Diego County. — The San Diego branch of the Woman's Auxiliary, in place of the usual luncheon and program, gave, in June, two benefit bridge parties for the fund for the crippled children's pool. These were held on June 5 at 1 p. m. and at 7 p. m. at the home of Mrs. E. H. Crabtree, 3465 Hawk Street. Dessert was served, and games of bridge enjoyed by the large number of guests, the usual door and table prizes given. Mrs. Charles E. Howard and her social committee were in charge. A substantial sum was realized to add to the amount already pledged to the pool. Mrs. J. C. Elliot King,
Publicity Chairman.

NEVADA STATE MEDICAL ASSOCIATION

D. A. SMITH, Mina ..... President
E. E. HAMER, Carson City ..... President-Elect
J. N. VAN METER, Las Vegas ..... First Vice-President
W. H. FROLICH, East Ely ..... Second Vice-President
HORACE J. BROWN, Reno ..... Secretary-Treasurer

COMPONENT COUNTY MEDICAL SOCIETIES

WASHOE COUNTY

The regular monthly meeting of the Washoe County Medical Society was held in the Nevada State Building on June 15.

The preliminary routine business of the society was disposed of, and Dr. Erwin J. Hund was called upon to present his paper. His essay was on *Differential Diagnosis and Coronary Thrombosis and Occlusion.*

In substance, Doctor Hund said: "The sudden intense, prolonged pain is usually present in thrombosis. Contrary to the pain of angina, thrombosis pain comes on during rest rather than after exertion. Thrombosis is facilitated by decreased velocity in the blood stream with lowered pressure. Pathologic changes are present in the vessel walls, likewise changes both chemical and cytological in the blood constituents. The type of pain is often similar to angina, but of greater intensity and greater duration and greater prostration. The pain remains unabated from many hours to many days in contradistinction to the short duration of angina. The pain may be epigastric, similar to the pain of duodenal rupture. In thrombosis there is great shock. There is no condition where shock, if present, is more pronounced. The next symptom observed in thrombosis is the fallen blood pressure. If the case was 250 milligrams of pressure, it may drop to 150 milligrams. It is highly necessary in this instance to make the diagnosis between thrombosis and angina. Dyspnea is one of the outstanding symptoms of thrombosis. The cause of dyspnea is believed to be due to the low velocity with which blood is pumped through the lungs, and the damage is usually to the (right?) side of the heart. In line with thrombosis we may have cyanosis, pulmonary edema, albuminuria, and subcutaneous edema, which assist in establishing the diagnosis. In addition to the above, there are three cardinal findings to corroborate the above diagnosis: They are the heart sounds, remarkable in their feebleness and at times apparently absent. This enfeeblement is due to pericardial involvement with myocardial weakness. In this type of attack, if seen early, fever is always present, but usually of slight degree. The fever results from infarction and necrosis of the thrombus. As fibrosis takes place the fever declines. The physician will find that here it is highly important to have a count made of the leukocytes to determine the increase of the polymorphonuclears. They may run from 10,000 to 25,000, and the average is 15,000. A return to normal count and a lengthening period of complete rest should be insisted upon by the physician before any form of activity is undertaken by the patient.

"The third symptom is shock. For the treatment in the stage of pain, together with heart-block and anoxemia, digitalis and nitroglycerin are not indicated, but rather the hypodermic use of liberal quantities of morphin up to the point of narcosis. Oral administration is worthless. Sometimes the pain is so terrific that the patient feels like tearing himself to pieces. For the shock, heat is par excellent, but be careful to elevate the patient rather than to lower the head. The patient will, himself, insist upon the upright position. If stimulation is to be desired, caffein is the drug of choice, given by hypodermic.

"In the intermediate stage, gastro-intestinal symptoms peculiar to thrombosis, and which is not relieved by vomiting, is the major complaint. For the relief of this condition, alcohol in its many forms is valuable. Painful eructations is usually relieved by carbonated water."

In conclusion, Doctor Hund suggested that in the future care of the patient nitroglycerin and digitalis were not indicated, but such type of medication as coupled with mental and physical rest that circumstances would indicate.

Doctor Hund's paper was followed by a paper on *Therapy in Heart Conditions* by Dr. George L. Servoss. In a very excellent review of all the standard medications usually given in heart affections, he also outlined the rôle of the newer agents that are coming into popularity today.

THOMAS W. BATH, *Secretary.*

Federal Aid in Mosquito Abatement.—It would appear that there is a possibility for communities in California to carry on, under the Federal Emergency Relief Administration, certain mosquito control activities in connection with the control not only of malaria-carrying mosquitoes but also salt-marsh mosquitoes and other pestiferous mosquitoes. Funds obtained for this purpose can be expended only for labor. Since the principal cost in mosquito control work is that connected with labor, the distribution of funds from this source would care for the chief item of expense in mosquito control work.

Surgeon General H. S. Cumming, of the United States Public Health Service, has requested the director of the California State Department of Public Health to submit an itemized list of possible mosquito control projects in California, together with the estimated cost, for transmission to the Director of Work Relief Projects.

Following is the text of a communication from Hugh R. O'Donnell, Director of Work Relief Projects of the Federal Relief Administration, to the Surgeon General:

"As you probably know, this administration is trying to put as many men to work as possible and is paying them out of funds provided partly by the government and partly by the states.

"We would like to hear from you on this subject and if you can submit any work projects for which no appropriations have been made available we should like to go further into the matter with you."

Mental Symptoms Associated with Cerebral Tumor.—Minski studied the mental symptoms in fifty-eight cases of cerebral tumor and made an attempt to assess their value, if any, in the localization of the tumors. Concurrently with these symptoms, the presence or absence of physical signs was noted with a view to helping in localization. He concludes that mental symptoms in cerebral tumor do not appear to depend on localization, but rather on the rate of growth of the tumor and the previous personality of the patient. Mental symptoms occur more commonly with cerebral tumors (more with left-sided than right-sided ones), as, of the fifty-eight examined, forty-nine were cerebral and only five subtentorial. All the former and only one of the latter showed mental symptoms. In slow-growing tumors personality changes predominate, the mood depending on the release of preformed tendencies. In this series, fourteen of the fifty-eight patients examined were depressive and seven manic. In rapidly growing tumors, changes in the intellectual sphere are marked and personality changes slight, while in the more rapidly growing tumors intellectual disturbances with clouded consciousness are found. In the former group were twenty-three, and in the latter six. Twenty-five patients showed reactions simulating functional psychoses, and in twelve of these physical signs were absent. Physical signs are less common in patients admitted to a hospital caring for the mentally deranged patient than in patients admitted to a neurologic hospital, while aphasia is commoner in patients seen in the former.—*Journal of Neurology and Psychology.*

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings

American Congress of Physical Therapy, Philadelphia, September 10-13. Mr. Marion G. Smith, 30 North Michigan Avenue, Chicago, Secretary.

American Ophthalmological Society, Lucerne-in-Quebec, Canada, July 9-11. Dr. J. Milton Griscom, 2213 Walnut Street, Philadelphia, Secretary.

New Mexico Medical Society, Las Vegas, July 19-21. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.

Pacific Coast Oto-Ophthalmological Society, Butte, Montana, July 16-18. Dr. F. C. Cordes, Fitzhugh Building, San Francisco, Secretary.

Medical Broadcasts*

American Medical Association Health Talks. — The American Medical Association broadcasts on a western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, central standard time.

* * *

San Francisco County Medical Society.—The San Francisco County Medical Society broadcasts every Tuesday from station KJBS, 11:15 a. m., and over station KFRC, 1:15 p. m.

* * *

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of July is as follows:

Tuesday, July 3—KECA, 11:15 a. m. Subject. Health Talk.
Saturday, July 7—KFI, 9 a. m. Subject: Health Talk.
Saturday, July 7—KFAC, 10 a. m. Subject: Your Doctor and You.
Tuesday, July 10—KECA, 11:15 a. m. Subject: Health Talk.
Saturday, July 14—KFI, 9 a. m. Subject: Health Talk.
Saturday, July 14—KFAC, 10 a. m. Subject: Your Doctor and You.
Tuesday, July 17—KECA, 11:15 a. m. Subject: Health Talk.
Saturday, July 21—KFI, 9 a. m. Subject: Health Talk.
Saturday, July 21—KFAC, 10 a. m. Subject: Your Doctor and You.
Tuesday, July 24—KECA, 11:15 a. m. Subject: Health Talk.
Saturday, July 28—KFI, 9 a. m. Subject: Health Talk.
Saturday, July 28—KFAC, 10 a. m. Subject: Your Doctor and You.
Tuesday, July 31—KECA, 11:15 a. m. Subject: Health Talk.

New York Polyclinic Medical School and Hospital. Dr. J. Eastman Sheehan has been appointed professor of plastic reparative surgery at the New York Polyclinic Medical School and Hospital, and a department has been organized for postgraduate teaching in this subject.

Dr. Sidney V. Haas has been appointed professor of pediatrics at the New York Polyclinic Medical School and Hospital.

Dr. James P. Croce has been appointed clinical professor of internal medicine at the New York Polyclinic Medical School and Hospital.

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to CALIFORNIA AND WESTERN MEDICINE, 450 Sutter Street, San Francisco, for inclusion in this column.

Some Important State Election Dates:

July 17—Last day for filing initiative petitions. One hundred and eleven thousand valid signatures are required to place an initiative measure upon the ballot.

July 18—Last day for registration for the primary election.

August 28—Primary election.

September 27—Last day of registration for the general election.

November 6—General election.

Query—Are you registered?

American Board of Ophthalmology.—The American Board of Ophthalmology will this year conduct a special examination at the time of the meeting of the Pacific Coast Oto-Ophthalmological Society in Butte on July 16, and to accommodate those who cannot go to Butte an examination will be held at San Francisco about July 25.

The fee for the examination and the certificate is $50. Of this sum, $25 must accompany the application and the balance must be paid when the certificate is ready for issuance. No refunds are made. If the candidate fails in an examination he will be permitted to take a second examination within three years without additional fee.

Dr. William H. Wilder, 122 South Michigan Avenue, Chicago, is the secretary of the board, from whom application blanks and all necessary information may be obtained.

CORRESPONDENCE

Subject of following letter: Regulating payment of vouchers for medical services rendered to injured Civil Works Administration employees.

Federal Civil Works Administration for California
49 Fourth Street
San Francisco
Edward Macauley, Administrator

June 25, 1934.

To the Editor:—As per our telephone conversation with Secretary Pope of the California Medical Association this morning, I am attaching hereto a bulletin from the United States Employees' Compensation Commission and ask that you give it as wide publicity as possible throughout your Association. Also if you know of any means whereby you can reach the nonmembers of your Association, I would appreciate their being contacted also.

It is requested that the bulletin be printed verbatim and that my name and title be used as authority for the dissemination of this information.

I would also appreciate it if you could get word at the same time to the doctors, hospitals, nurses, medical supply houses and drug stores not to communicate direct with the Commission in Washington regarding their bills. Any person or firm has a right to do so, but it only results in loss of time since the Commission refers all matters back to my office for investigation. If a creditor insists on writing to Washington,

he will greatly oblige if, at the same time, he sends us a copy of his letter and/or bill and in all cases the name of the injured employee should be connected with the claim, since it is by use of an alphabetical file containing the name of all injured CWA employees that we can find a case.

We are making every effort to clean up the 12,000 California CWA Compensation cases as speedily as possible. In justice to the men who have compensation coming we have given their cases priority, and the medical vouchers connected with these cases will naturally be paid first. This leaves the cases involving medical expense only to the last, but I think you will agree that this was the most humane way to handle the work since the injured employees were in such dire need of their compensation.

Yours very truly,

EDWARD MACAULEY,
Civil Works Administrator for California.
(Signed) By Bartle M. Harvey,
Insurance Officer of Civil Works for California.

* * *

To All Persons Interested in the Payment of Vouchers for Medical Services Rendered to Injured Civil Works Administration Employees:

A certain amount of delay in the settlement of vouchers for medical services rendered injured employees of the Civil Works Administration is unavoidable. Legislation extending compensation benefits to these employees was not approved until February 15, 1934, and the Commission has had to engage personnel and set up its organization to handle the large volume of additional work which is involved in the settlement of claims arising out of Civil Works employment.

Before approving vouchers for medical services, it is necessary for the Commission to have received from the local Civil Works Administrators complete reports relating to the injury of the employee concerned. Since the entire work program was organized very quickly, some localities were slow in setting up the necessary local administration to take care of injury reports, and due to unfamiliarity of the personnel with the requirements and procedure, many reports of injury have been incorrectly filed, necessitating correspondence to obtain the information which was lacking.

In view of the problem presented, the Commission bespeaks the patience of physicians and others who have bills for medical services pending. Every possible effort is being made by the Commission to speed up the work of examining and certifying these claims for payment, and it is believed that within a short time considerable progress will be made in further expediting these payments.

U. S. EMPLOYEES' COMPENSATION COMMISSION.
Bartle M. Harvey,
Insurance Officer of Civil Works for California.

Subject of following letter: Comments on the paper, "The Challenge of Allergy in Medical Practice" printed in the May "California and Western Medicine":

May 25, 1934.

To the Editor:—I would appreciate it very much if you would publish the following discussion of a paper entitled "The Challenge of Allergy in Medical Practice" by Dr. Albert H. Rowe, which appeared in the May number of CALIFORNIA AND WESTERN MEDICINE:

"This paper demonstrates the widely divergent views pertaining to the subject of allergy, most workers in this field not being in accord with the author that so many diseases of mankind are allergic. It is true that many allergic conditions are overlooked, for example, mild vasomotor rhinitis and hay fever, which are seen so frequently in children and considered common colds. On the other hand, one must not let the enthusiasm of the specialist run away with one's critical acumen.

"The author's statement that bronchial asthma in children is usually due to a food sensitivity is not in accord with our own experience in that, in a study of over fifteen hundred children completely and thoroughly tested, only one in one hundred reacted to foods alone, while 80 per cent were multiple sensitive to foods and other substances such as pollen, epidermals, etc. It is not unusual for infants to be sensitive to the inhalants alone—perhaps not as frequently as with foods.

"The general experience of most workers in the field of asthma as regards the diagnosis 'bacterial asthma,' is that such diagnosis is arrived at by a process of elimination. The diagnosis is a negative one, and only presumptive of a bacterial etiology, since as yet there has never been scientific proof of the existence of such a clinical entity. Those whose work would indicate the contrary of this are open to the criticism that the production or relief of attacks of asthma by the injection of bacterial substances have not proved that such reactions are specific in nature.

"We are thoroughly in accord with the author that in arriving at correct diagnosis the taking of a careful and searching history from the patient as to heredity, occupation, environment, clinical history and the various laboratory studies such as blood, x-ray, and lastly and most important, protein testing, are necessary.

"The treatment is primarily dependent upon determination of a specific etiology, as the author points out. The results of treatment are dependent upon the close coöperation of patient and physician and the realization that this condition is usually a chronic and constitutional one requiring considerable time and patience on the part of the allergic individual and clinical skill and ingenuity on the part of the physician, and finally, that allergic disease cannot be treated by stereotyped methods, each individual being a problem in himself."

Very truly yours,

GEORGE PINESS, M. D.

Subject of Following Letter: A protest by the Human Betterment Foundation of California regarding a movie film:*

To the Editor:—There is now circulating in the United States, put out by the same producers as "Elysia," the nudist colony movie, a motion picture entitled "Tomorrow's Children," which professes to tell the "truth about sterilization." It is entirely misleading, and tends to scare people as to the administration of a sterilization law, under fictitious conditions which we feel sure could not occur in any American state. The advertising that has appeared in the newspapers is even more objectionable than the general tone of the film. Some effort ought to be made to present a correct statement of the facts to the public of any city where the film is shown.

If it should be shown in your city, would it not be possible to send statements to the newspapers, in order to call attention to the fact that this film is misleading and unfair to sterilization? We believe such action on the part of responsible local persons would have a very valuable influence in preventing the growth of prejudice against the proper administration of sound and well-protected sterilization laws in the United States.

Cordially yours,

HUMAN BETTERMENT FOUNDATION.
By E. S. Gosney, President.
Pacific Southwest Bldg., Pasadena.

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* For two articles on topic, "Who Should Be Sterilized," see June CALIFORNIA AND WESTERN MEDICINE, page 429, and this issue, page 54.

POLIOMYELITIS

Los Angeles County Hospital Staff Resolutions

At a special meeting of the Medical Advisory Board of the Attending Staff of the Los Angeles County Hospital, held on Friday, June 15, to consider poliomyelitis conditions confronting the hospital, the following resolutions were introduced by Dr. George H. Kress and were unanimously adopted. They are given space here because they may have suggestive value to staffs of other hospitals in which somewhat similar complications may arise. The principles embodied in the following resolutions are also discussed in this issue on page 50:

RESOLUTIONS

WHEREAS, An epidemic of poliomyelitis (infantile paralysis), of wider prevalence than in past years now exists in California, with the largest number of cases at the present time in Southern California; and

WHEREAS, Excluding poliomyelitis patients already treated and discharged at the Los Angeles County Hospital, there are now in the institution over three hundred in-patients with proved poliomyclitis, and about two hundred in-patients under suspicion for the same disease; and

WHEREAS, A total of some five physicians and thirty nurses have contracted poliomyelitis while on present duty at the hospital (several of these being interne physicians and student nurses); and

WHEREAS, It is only proper that the health and lives of the physicians, nurses, and others in attendance on these patients should be taken into as full account as the health and lives of the patients themselves; now, therefore, be it

Resolved, By the Medical Advisory Board of the Attending Staff of the Los Angeles County Hospital at a special meeting held on Friday, June 15, that in the opinion of the members of that board the following steps should be taken by the constituted authorities:

1. That needed quarantine procedures be stringently observed by all who enter or work in the poliomyelitis wards of the County Hospital.

2. That no interns or student nurses be placed on service in such wards unless provisions be made that in case of infection they shall be immediately given salary registrations that provide them with adequate protection through the State Compensation Law.

3. That all registered nurses be on salaries sufficient to have the State Compensation Law adequately protect them.

4. That in similar manner, if additional medical aid is needed, that this be secured, if possible, through the employment of interns and registered physicians from the ranks of private practice, at adequate salaries.

5. That the personnel having the care of these patients be sufficiently large so that doctors, nurses, and others be not required to work to the point of such fatigue as to predispose them to infection, and that the hours of work be regulated accordingly.

6. That all personnel in attendance upon these patients be given the opportunity to receive, if they so wish, prophylactic treatment with sera, to be prepared according to the accepted procedures, as may be necessary; and be it further

Resolved, That this Medical Advisory Board directs that copies of these resolutions be sent to the following:

To the Board of Supervisors, and each member thereof;

To the Los Angeles Chamber of Commerce, and a copy to the president and secretary thereof;

To the California State Board of Health;

To the Los Angeles County Medical Association.

* * *

Poliomyelitis Symptoms

"Poliomyelitis Symptoms," prepared in an abbreviated form by George Parrish, M. D., health officer of the city of Los Angeles, appear below.

The City Health Department emphasizes the necessity of an early diagnosis and report.

INCUBATION PERIOD: Rarely less than six, nor more than eighteen days, usually seven to fourteen days.

TYPES OF ONSETS: Much the same in all types. May be just as severe in the abortive and non-paralytic as in paralytic. Vast majority of cases abrupt. Rarely insidious (cold). Three types on onset:

1. Out-of-the-blue paralysis—rather rare.

2. Systemic infection gradually and uninterruptedly involving the central nervous system.

3. Dromedary type.

SYMPTOMS: Headache (constant) fever (constant), vomiting, constipation (diarrhea).

Fever: No characteristic curve; last four to ten days; falls by lysis, occasionally by crisis.

Pulse: In proportion to fever. Rapid rate—Bulbar paralysis.

Respiration: With pulse and temperature. Rapid rate bulbar involvement.

Hyperesthesia: More diagnostic as an early symptom even than the fever; may be quite general and elicited by lightest touch or deep pressure; more marked over spine and large nerve trunks. Hyperesthesia and anesthesia practically never occur.

Pain in Neck.

Extreme Drowsiness, alternating with irritability when disturbed. Pain in extremities presages an oncoming paralysis. Neuritic pains common.

Tremor or Twitchings of muscle groups, occasional early symptoms.

Convulsions: Rare—in more recent epidemics.

Meningeal Symptoms occurring early are antero-posterior:

Stiffness of neck and especially of the back.

Often a moderate Kernig's sign.

Positive Brudzinski's sign.

Positive MacEwen's sign.

Changes in reflexes.

Profuse sweating often an early symptom.

CLASSIFICATION OF POLIOMYELITIS

1. The spinal poliomyelitis form.
2. The meningitic.
3. The encephalitic.
4. The form resembling Landry's paralysis.
5. The abortive.
6. The bulbar or pontine form.
7. The ataxic.
8. The polyneuritic (resembling neuritis).

* * *

Subject: Salary Ordinance—Emergency amendments to provide Workmen's Compensation for nurses and doctors on poliomyelitis wards who now receive maintenance only or nominal pay with maintenance. A letter to the Los Angeles Board of Supervisors.

The Honorable Board of Supervisors, County of Los Angeles, Addressed.

Dear Sirs:

"In caring for poliomyelitis patients on our isolation wards a number of our workers have, unfortunately, contracted the disease. The total number of those afflicted to date is thirty-two, representing various employee groups as follows: Resident physicians, three; internes, two; graduate nurses, fourteen; student nurses, nine; attendants, two; ambulance driver, one; kitchen worker, one. Considering that during the past thirty days over five hundred poliomyelitis patients have been received at the hospital and that on some days the admissions of actual or suspected cases have numbered sixty or more, these incidences of infection were probably unavoidable under the circumstances due to the humanly impossible task of providing in

such great haste a force of workers trained to handle this highly contagious disease without danger to themselves.

"Insofar as the illness of these workers is determined to have been contracted in the performance of duty, they are entitled to medical care and compensation as provided by law. At present, and for some time past, this compensation, in cases of contagious disease, has been determined and allowed from month to month by action of your Honorable Board, but the new Salary Ordinance, No. 2473 N. S., effective July 1, 1934, provides that after that date the State Workmen's Compensation Law shall govern such cases. This gives proper protection for those who receive an adequate salary, but for resident physicians, interns, and student nurses, who receive only full maintenance plus a nominal monthly cash allowance, the Workmen's Compensation Law would afford such meager and inadequate relief as to be negligible and unjust. While it is estimated that in this epidemic only about 30 per cent of those ill with poliomyelitis will suffer paralysis and only about one-half of this number will be afflicted with permanent disability, it is nevertheless of the utmost importance that these young doctors and nurses be protected to a degree commensurate with the ordinary evaluation of their services as professional workers.

"I believe that this measure of protection can be provided for these afflicted workers through the creation of new item numbers parallel with those on which they are now employed and carrying a salary equal to that provided for workers in their respective classifications who have completed their student or apprentice service. These items would be used only for the benefit of students or apprentice workers who become afflicted with poliomyelitis (infantile paralysis) as the result of employment on the wards or clinics of the hospital and would not apply to any other contagious or non-contagious disease. I believe that about 40 per cent of each group of doctors and 25 per cent of student nurses on non-salaried or nominally paid item numbers should be provided for through the proposed parallel new item numbers at normal salary.

"In line with this plan I hereby respectfully recommend that your Honorable Board amend Section 18 of Ordinance 2101 N. S. by the adoption of an emergency ordinance, effective immediately, to authorize the following items: . . .

"No additional appropriation for salaries and wages will be required by these amendments, inasmuch as any compensation payable under these salary provisions would be paid out of the Workmen's Compensation insurance fund." . . .

Paralysis War Needs Doctors

Under the above caption the Los Angeles *Examiner* of June 20, printed the following item:

With the number of infantile paralysis cases under treatment at the General Hospital increasing yesterday from 324 to 360, the need for additional nurses and physicians became more pronounced, hospital attachés declared.

Ten physicians and forty nurses at the hospital have contracted the disease during their desperate fight to stem its tide, it was stated. Immediate replacements for the stricken medical men and nurses are required.

Meantime, Mr. Norman R. Martin, superintendent of the General Hospital, where most of the infantile paralysis cases have been isolated, was awaiting the Board of Supervisors' action on his request for authority to employ fifty nurses for emergency duty.

Health department figures released yesterday showed thirty-five new cases in the city proper and twenty-nine in county territory for the forty-eight-hour period ending Monday.

Since January 1, there have been 331 cases in the county and 525 in the city; since May 1, 307 cases in the county and 496 in the city.

Excerpts from Report Secured from the Los Angeles District, California State Nurses' Association

Because the element of fatigue may play a considerable rôle in favoring infection with poliomyelitis, it may be proper to quote from a report dated June 18, which was received from an officer in the Los Angeles district of the California State Nurses' Association, relative to work hours and compensation of nurses at the Los Angeles County General Hospital. It is understandable why nurses are reluctant to go to the County Hospital if the hours are long and irregular, the work hard, and no definite assurance at the time of the above date, of proper compensation in the event of paralysis disability following possible infection from poliomyelitis. Quotation follows:

"The information obtained from the Official Nursing Bureau is as follows:

"The Bureau has a total of 1,037 registrants (May 31). The majority are graduates from California schools. The number who have had training or experience in contagious disease nursing is not known. It is planned to secure this information as memberships are renewed; this will begin January 1, 1935.

"During the period of this epidemic it has not been possible for this office (the Nursing Bureau) to supply as many nurses as were required for general duty in the Los Angeles County General Hospital because:

"1. Nurses had not had contagious disease training or experience and were 'afraid';

"2. They had small children at home and were afraid of carrying the infection;

"3. Nurses found the work too hard;

"4. They were unwilling or were unable to endure the work over broken hours—as some were required to work from 7 to 11 a. m. and return to work from 7 to 11 p. m. They would then be expected to return to duty at 7 a. m. the following day;

"5. Nurses were not willing to work for the wages offered. In the beginning of the epidemic these were the regulations:

"An eight-hour day (broken hours).
"A five-day week.
"No maintenance or car fare.
"Forty cents per hour.

"Later the regulations allowed:

"One meal.
"Fifty cents per hour; otherwise as above."

Poliomyelitis Suggestions From the Department of Public Health of the City and County of San Francisco

The following communications have been received from Director Geiger and are printed for their suggestive value to others:

June 19, 1934.

To the Laboratories of San Francisco: The Committee on Acute Anterior Poliomyelitis has recommended to the physicians of San Francisco that there is justification for the use of convalescent serum in the treatment of the disease and as a prophylactic to early contacts. In addition, the committee has advised the use of normal adult serum, pooled from groups of five to ten individuals, as a prophylactic to be given to direct contacts (and to others if ordered by the family physician). This type of immunizing procedure is obviously in the experimental stage and its value problematical.

These recommendations are based on the work reported upon in the literature of Flexner, Aycock, and others. It is believed that the present outbreak offers a rare opportunity for the compilation of data which will furnish evidence from which conclusions can be rather accurately drawn in determining the true value of convalescent and normal adult serum, as both therapeutic and prophylactic agents.

This communication is directed at the standardization of the technique of preparing the serum, and the following outline presents the technique followed in the laboratories of the George Williams Hooper Foundation for Medical Research, and is recommended as the desirable technique to be followed in all collect-

ing centers for the preparation of normal adult serum or for convalescent serum:

(Note—Application to Director Geiger will bring you a copy of the bulletin giving technique.) . . .

The distribution of normal adult serum for prophylaxis should be to physicians in vials containing 20 c.c. or small multiples of this amount, since the recommended dosage is 20 c.c.; but the convalescent serum package for treatment of the case should be of the 50 c.c. unit, since this is the therapeutic dosage recommended for the affected child, and multiples thereof in the affected adolescent and adult.

We are enlisting your coöperation in the collection and distribution of serum, with the particular request that the standard procedure be followed and that accurate records be kept. Only by a coördinated effort can we take advantage of this opportunity to meet the present emergency in an adequate, intelligent, and modern manner. We expect your participation, therefore, to this end.

Sincerely,

J. C. Geiger, M. D.

Director of Public Health, San Francisco; Chairman, Committee on Acute Anterior Poliomyelitis.

* * *

THE RECOMMENDATIONS OF THE COMMITTEE ON ACUTE ANTERIOR POLIOMYELITIS, DEPARTMENT OF PUBLIC HEALTH, CITY AND COUNTY OF SAN FRANCISCO

June 18, 1934.

1. "San Francisco is faced with an outbreak of poliomyelitis. At the present time the disease exists to the extent of one case in each 20,000 of population.

2. "Experience shows that the blood serum from convalescent patients has value in the early treatment of the disease.

3. "It has been established that many adults have acquired an immunity to poliomyelitis. It is reasonable to suppose that the blood serum of these adults may have a temporary protective value when injected into susceptibles. The experimental evidence is merely suggestive, but by no means conclusive.

4. "There has been established at the Hooper Foundation Laboratories at the University of California, Montrose 3600, to collect process, and provide serum from convalescents for the early treatment of poliomyelitis. Convalescents from poliomyelitis who wish to offer their blood, communicate as above. This convalescent serum is necessarily limited in amount; therefore it should be used without exception only for the early treatment of patients with undeniable poliomyelitis.

5. "The committee recognizes that some authorities have suggested the injection of normal adult human serum for the protective immunization against poliomyletis. Because of its possible value, the committee recommends the early use of this serum on known direct contacts. From the evidence available, the committee does not feel justified in recommending the use of this serum for mass immunization. The use of such adult serum should be left to the practicing physicians.

6. "The Department of Public Health will issue regulations for the proper processing of adult serum and its distribution from private laboratories to practicing physicians.

"Therefore, the Department of Public Health only advocates the immunization of contacts to frank cases of poliomyelitis. Such contacts should be offered this possible protection within forty-eight hours after last exposure to a case, and when such contacts are in the susceptible age groups, namely 5 to 20 years of age.

"The efficacy of this is by no means proven and these contacts must be carefully observed for the usual quarantine period of 21 days. Records of such infections must be kept and sent to the Health Department in order that the value, if any, be statistically determined."

J. A. M. A. (June 23) Comments on Poliomyelitis in California

The following is reprinted from the editorial columns of the June 23 *Journal of the American Medical Association:*

POLIOMYELITIS IN CALIFORNIA

"With the news spreading widely over the United States that there is an increase in the incidence of anterior poliomyelitis in the Los Angeles area, physicians everywhere are being besieged with questions as to whether or not it is safe to travel into that district and as to whether or not the incidence is sufficiently great to be termed epidemic. The number of cases is well beyond the average incidence of infantile paralysis in the community concerned and is, therefore, of epidemic proportions. No one can say just when the epidemic will reach its peak. The factors concerning the duration of such epidemics are not well established. Some epidemics in Southern California, according to information received from the United States Public Health Service, seem to extend over longer periods than elsewhere, and the curves have flatter tops than those of other similar areas. This does not necessarily mean a larger number of cases per hundred thousand of population.

"The incidence of poliomyelitis is higher than normal for Los Angeles or for any other California district, and it is not considered safe to send a small child into the vicinity. The danger, of course, is small in comparison with the danger from much more contagious conditions, but the danger is definite and should not be assumed if it is avoidable. A child under six years of age falls within the most susceptible age group and for this reason would be subjected to a special hazard if taken from a non-infected area into an infected area. It is, moreover, especially difficult to protect a child against contact with infantile paralysis, since the disease seems to be distributed by carriers, as are also scarlet fever and diphtheria, so that the child might become infected from a person who is apparently well. Epidemiology establishes the fact that infantile paralysis, like epidemic encephalitis, clears up with the coming of cold weather. In the Los Angeles area the first really cool weather may not be expected until November or December.

"Considerable agitation is apparent among parents as well as among physicians for mass immunization of the apparently well child, not only in the Los Angeles area, but also in San Francisco and in adjacent cities. Whole blood or convalescent serum is suggested for prophylaxis. A survey of the available evidence indicates that neither of these methods has been used to a sufficient extent in well-controlled experiments to provide data of value, either in favor of or against its efficiency. In measles, convalescent serum seems to have value, and, with the certain knowledge that antiviral substances for poliomyelitis exist in the serums of adults and of recovered cases, the prophylactic use would seem to be rational and might be given a trial in children who are unavoidably exposed to the epidemic area. However, the period during which such protection might continue from a single injection is not known. If such experiments are made, records should be accurately kept, as the information will be of exceeding value in determining future practice."

* * *

Los Angeles Poliomyelitis Morbidity Up to June 26, 1934

Excerpts from Los Angeles *Herald,* June 26, 1934:

UNITED STATES EXPERTS MAY AID WAR ON PARALYSIS

"Aid of federal public health technicians in combating the spread of infantile paralysis here may be requested by Dr. J. P. Leake, poliomyelitis expert, who arrived here from Washington Sunday, it was announced today.

"Doctor Leake conferred with city and county health officers yesterday in preparation for his work of investigating the epidemic here.

"Dr. Edward C. Rosenow of the Mayo Foundation is expected in the city today to aid in the study of the disease. Doctor Rosenow is a nationally known authority on poliomyelitis.

"New cases reported yesterday make a total of 447 in the city and 270 cases outside the city for the month of June, a total of 717 cases.

"In May, there were 176 cases in the city, and 107 in the county outside the city, a total for the month of 283 cases.

"The total since the first of the year is 650 in the city of Los Angeles and 389 in the county of Los Angeles outside the city, a total of 1,039 for the epidemic.

"A slight increase in the number of poliomyelitis patients in the communicable disease ward of the General Hospital was recorded today, with fifty-four new patients admitted, (twenty-eight from the city) and thirty-six discharged. This represents an increase of eighteen. There are now 334 cases under treatment, with 195 suspected patients, including five 'contacts.' "

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VII, No. 12, July, 1909

From Some Editorial Notes:

The American Medical Association Meeting.—The annual meeting of the Association, held this year at Atlantic City, was remarkable only for the fact that it seemed to crystallize the general feeling of approval of those policies of the Association which have brought forth such a deluge of criticism from certain questionable quarters. . . .

* * *

The New Officers.—When it came to the election of officers, there seemed to be even more than usual unanimity of opinion in the American Medical Association House of Delegates. There was no contest over any office save that of one of the vice-presidents, and in this instance the feeling was entirely friendly. Dr. William H. Welch of Johns Hopkins was the unanimous choice for president; he has served the Association for a number of years as a trustee and has the confidence and respect of every member of the Association. . . .

* * *

Place of Meeting.—The delegates from California to the House of Delegates of the American Medical Association did everything in their power to secure the election of Los Angeles for the place of the next annual session; but it was not to be. . . . So St. Louis was chosen. But the probabilities are that, should California extend an invitation next year, the Association will come to our state. It last met in California in 1894.

* * *

Gather Energy.—Just because it is summer time, and vacation time, don't let all your interest in and enthusiasm for your society work dissipate into thin nothingness. Remember that it is up to our medical organizations to see that the people of this state get proper public health laws and proper protection. . . .

* * *

Take a Vacation.—That is just what the editor is going to do, and what he advises every one of you to do; take a *real* vacation, even if it is for only ten days or two weeks. . . .

From an article on "Fat as a Disturbing Factor in Infant Feeding" by Langley Porter, M. D., San Francisco.

The disturbances due to fat may be classed as disturbances in the breast-fed and disturbances in the bottle-fed. These disturbances may further be divided into those evidenced by indigestion, either gastric or intestinal, and those evidenced by disturbances of metabolism. . . . With Doctor Chipman I have seen one such case, which died in the Lane Hospital, and one other was referred to me by Dr. Walter Coffey.

The Interrelations of Glands with Internal Secretion.—Since Brown-Séquard, guided by the fatal results of the extirpation of the suprarenal glands, first established the idea of internal secretion, the physiological and clinical significance of the function of the ductless glands has been the subject of great controversy. . . . Clinical and experimental data pointed to the fact that the product of these internal secretions regulated cer-

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and new members.

(Continued in front Advertising Section Page 12)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

By Charles B. Pinkham, M. D.
Secretary-Treasurer

News Items

"The Grand Jury's attack on alleged racketeers in health protective societies received a new impetus today, when indictments were returned against H. N. Duhem, head of the Associated Health Service, and Dr. A. M. Ryan, listed as a medical employee of the organization. Two alleged victims of the society were named—Mrs. Dora Brady, 29 Belcher Street, and Vida J. Knoll, both of whom were denied aid, after paying their membership dues. . . ." (San Francisco *Call-Bulletin,* June 1, 1934.)

"Two more indictments growing out of the so-called 'health racket' were voted by the County Grand Jury last night. Those named in the indictments were L. V. Reed and Joe Bloom, manager and salesman, respectively, of the United Health Services, with offices at 209 Post Street. The charges were conspiracy to obtain money under false pretenses. Several witnesses were presented by Leslie C. Gillen, Assistant District Attorney, in charge of the Fraud Bureau. Meanwhile, from Sacramento, according to the Associated Press, came word that R. A. Sewall, sought since December in connection with the 'health racket' in Oakland, was arrested in a rooming house in that city last night." (San Francisco *Chronicle,* June 8, 1934.)

"The Federal Trade Commission charges the Bayer Company, Inc., of New York today with misrepresentations in the sale of its aspirin tablets. The Commission said, 'There are some persons by whom Bayer tablets may not safely be taken, even in small or moderate doses.' The company is given until July 13 to show why the Commission should not issue an order requiring the company to desist from alleged misrepresentations. The Commission's announcement said: 'Among the practices are representations in advertising tending to mislead the ultimate buyers into believing that only Bayer aspirin is genuine aspirin, that aspirin sold by its competitors is not aspirin, is not as beneficial to the users as Bayer's aspirin and is counterfeit or spurious." (Associated Press dispatch, dated Washington, June 13, 1934, printed in the Sacramento *Bee,* June 13, 1934.)

"A chiropractor by any other name is still a chiropractor, Attorney-General U. S. Webb ruled yesterday. He informed C. C. Hunt, secretary of the State Board of Chiropractic Examiners, that Wilbur W. Walp, who had signed a death certificate in Los Angeles as a 'chirothesian,' may be prosecuted for practicing chiropractic without a license." (San Francisco *News,* June 15, 1934.)

"Radio advertising must broadcast truthful assertions and eliminate misleading, extravagant claims, the Federal Trade Commission ruled today. The Commission declared the same standards would be applied to radio advertisers that long have been exacted of newspaper and magazine advertisers. It made public a letter to broadcasting stations, which said: 'Whenever statements occur in commercial announcements which appear to be false and misleading or otherwise constitute an unfair method of competition in com-

* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

(Continued in front Advertising Section Page 14)

Announcing

A PRICE REDUCTION FOR

TRYPARSAMIDE MERCK

Sodium Salt of N-phenylglycineamide-p-arsonic acid

COUNCIL ACCEPTED

THE therapeutic effectiveness of Tryparsamide Merck in the treatment of neurosyphilis has resulted in a steadily increasing demand. The consequent increased production now makes it possible to reduce the price and so place the advantages of this treatment within the means of practically all patients suffering from syphilis of the central nervous system.

The physician can now obtain TRYPARSAMIDE MERCK from his pharmacist at the following reduced prices:

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Phone TRINITY 8001

Cancer of the Bladder*—Among 11,737 malignancies treated at the State Institute for the study of Malignant Diseases during a period of twenty years there were 242 cases of cancer of the bladder—an incidence of 2 per cent.

In most cases the presence of this condition is indicated by the passage of bright red blood in urine. The serious import of this symptom often is not realized by the patient and sometimes not by the physician. Among the cases treated at the Institute, the average period of time which elapsed between the initial attack of hematuria and admission, was one and one-half years. If this first sign, painless hematuria, is ignored and the growth allowed to progress, further symptoms appear, such as frequency of urination, burning or painful urination, and pyuria. Other common conditions which give a similar symptom complex and from which bladder tumor must be differentiated are tuberculosis, calculus disease, tumor of the kidney, and obstructive lesions at the vesical orifice.

Cancer of the bladder occurs in two forms: the papillary in which most of the growth is from the mucosa outward in stalk-like formations; and the non-papillary which tends to spread laterally along and infiltrate the mucosa and wall of the bladder. These tumors occur in varying grades of malignancy. Some are very malignant, grow rapidly and are quickly fatal. Others are of low malignancy, grow very slowly and may exist for many years before causing serious damage to their host.

Metastases from bladder tumors as a rule occur relatively late and are found in pelvic and abdominal lymph nodes, bones, and lungs.

Treatment consists in the application of irradiation, electro-coagulation, and surgery. The small

* By Charles Herger, M. D., State Institute for the Study of Malignant Diseases, 113 High Street, Buffalo, New York.

CANYON SANATORIUM

REDWOOD CITY, CALIFORNIA

An Open Air Sanatorium for the Treatment of Tuberculosis and Diseases of the Chest.

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lesions can be successfully treated by means of the cystoscope by the implantation of radon seeds or fulguration. Advanced cases can be palliated considerably and sometimes well controlled by the suitable application of external irradiation with high power x-ray or radium packs, combined with some form of interstitial irradiation, either radon seeds or radium element needles.

Study of the results of treatment of the 242 cases, which included many far advanced or recurrent cases (recurring after treatment elsewhere), shows that about 20 per cent are controlled for periods varying from two to ten years.

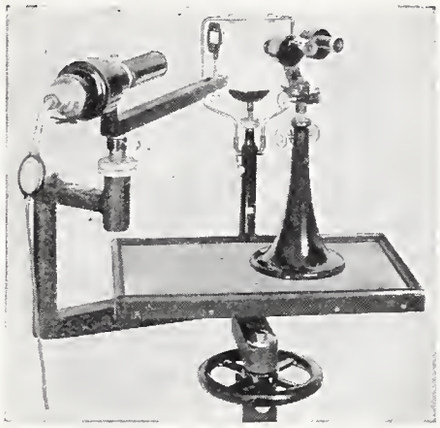
Control of Injurious Rodents in California.—The College of Agriculture of the University of California has issued a publication entitled "Control of Injurious Rodents in California," by Tracy I. Storer, professor of zoölogy and zoölogist in the College Experiment Station at Davis. In this work, Professor Storer describes proper measures to use in the control of a number of rodents that have a distinct bearing upon the public health. Among such are ground squirrels, the introduced Norway, black and roof rats, jackrabbits and cottontail rabbits. He states that gross estimates of more than $20,000,000 annually have been made on the financial loss inflicted by rodents in California. "Efforts at suppressing injurious rodents date from the earliest days of farming in California; attempts at ground squirrel destruction were made by the Mission Fathers. Governmental aid early took the form of bounties paid by counties for squirrels and gophers. The introduction and spread of bubonic plague among ground squirrels in the coastal region of California during the early years of the twentieth century stimulated federal and state organizations to reduce the numbers of these animals."

He discusses methods of control of these rodents and provides valuable reference material for individuals who are engaged in activities pertaining to rodent extermination. The important information relative to the natural history and habits of these rodents constitutes a valuable index toward the application of control methods. Formulas for preparing poison baits for rodents are also provided. The circular is numbered 79 in the series of Agricultural Extension Service circulars issued by the College of Agriculture of the University of California at Berkeley.

Industrial Accident Commission.*—*Compensation Department.* This Commission has consistently during the years held out-of-town hearings for the convenience of litigants at great expense to the State of California. Present shortage of finances makes it imperative for the Commission to reduce all expenses to the minimum, and therefore it has become necessary to expedite hearings as much as possible. So that a better understanding on behalf of the public may be had, and so that the coöperation of the parties appearing before the Commission may be obtained, it is here explained that the referees' time and travel, to be efficiently used, necessitates that trips be arranged over certain areas, with the view of holding the most hearings in the shortest time with the least amount of travel. The traveling referees do not cover the entire state each week or each month, and therefore in some areas two or three months elapse between trips. The parties and their attorneys sometimes find it inconvenient to attend the hearing at the time scheduled and ask for a continuance, feeling that no one is harmed when the case is continued to the following calendar. This is unfortunate, because the fact is overlooked that by the time another trip is scheduled other claimants have filed applications,

* State of California Department of Industrial Relations. Report to Governor's Council, November, 1933.

(Continued on Next Page)



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One of the Oldest Banks in California, the Assets of which have never been increased by mergers or consolidations with other Banks.

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June 30th, 1934

Assets $166,835,718.42 **Deposits $153,070,629.77**

Capital Paid up $6,000,000.00
Surplus $4,000,000.00
Reserves and Undivided Profits . $3,510,206.77

Total Capital Account . $13,510,206.77

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PARK-PRESIDIO BRANCH — Clement St. and 7th Ave.
HAIGHT STREET BRANCH — Haight and Belvedere Streets
WEST PORTAL BRANCH — West Portal Ave. and Ulloa St.

(Continued from Preceding Page)

necessarily indicating therefore that the case that should have been heard on the previous trip will be taking time that belongs to other parties.

The Commission finds that it will be necessary by reason of lack of appropriation to curtail the out-of-town trips, and the public is therefore notified that it will be necessary to deny continuances for the convenience of parties or their attorneys, and it is to be hoped that all concerned will realize that in the last analysis this is done for the best interests of the public at large, and that the Commission will have full coöperation in this matter.

The Commission further expresses the desire that parties to the various actions shall do everything possible to present their entire case at the first hearing and avoid requests for continuances.

The Commission further desires to report that there is a gradual increase in the number of original applications filed which seems to bear no direct relation to the amount of employment in the state. The highest average monthly filing for any fiscal year prior to June 30, 1932, was 520. In October of 1933, 575 original applications were filed, and this is not unsual, as an examination of the records discloses the fact that 546 cases were filed in August and 567 in September, 1933.

Legal Department.— During the last month an opinion of considerable importance from a procedural standpoint was handed down by the District Court of Appeal, Second Appellate District, Division One, in the case of Brunau vs. Industrial Accident Commission, et al., 2nd Civ. No. 9050. Certain dictum of the Supreme Court in the case of Dalsheim vs. Industrial Accident Commission, 215 Cal. 107, has now become law as a result of this decision. In the Dalsheim case, although the question was not directly presented to it, the Supreme Court indicated that, despite the holdings in the cases of Crowe Glass Company vs. Industrial Accident Commission, 84 Cal. App. 287, and Harlan vs. Industrial Accident Commission, 194 Cal. 352, it was an equitable rule that a party who was aggrieved for the first time by a decision upon rehearing where the Commission had reversed its original Findings and Award on Rehearing

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For the care and treatment of Nervous and Mental Diseases, Selected Alcoholic and Drug Addiction Cases

Patients referred to us by attending physicians remain in their care, except under their expressed wish to the contrary. Out of town doctors are furnished with daily reports of patient.

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Completely Equipped ✦ *Excellent Cuisine*

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RATES AND PROSPECTUS ON REQUEST

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should be allowed a Petition for Rehearing. This factual situation was clearly presented in the Brunau case and the District Court stated that the dictum in the Dalsheim case expressed such a reasonable rule that it should unquestionably be followed.

Another case in which an opinion was handed down was that of Chain vs. Industrial Accident Commission, 3rd Civ. 4999, in which a decision of the Commission finding an employer guilty of serious and wilful misconduct was annulled. The injured man fell from a combination scaffold and a platform when said structure collapsed. The Commission maintained that several safety orders which applied primarily to scaffolds applied to the platform in question, but the District Court disagreed with the contentions of the Commission.

Safety Department.—In June the Industrial Accident Commission sent a letter to the Mayor of every city and to the Board of Supervisors of every county, calling attention to the accidents that were occurring to men while working under unemployment relief. Special mention was made of "trucks and all other means of transportation." An appeal was made for coöperation in preventing these accidents.

Accidents due to this means of transportation continue, not only among those working on relief projects, but in our regular lines of industry. Men are being thrown out of, or fall out of improperly arranged or improperly operated automotive equipment so frequently that the Commission must take definite action.

From January 1, 1933, to November 15, 1933, the Commission has received reports of the deaths of 102 employees, every one of which occurred through the use or operation of an automobile, a truck, motorcycle, or one of these combined with a trailer.

These 102 deaths occurred in ninety-eight accidents, of which twenty-eight were collisions between motor vehicles, twelve were collisions between automobiles or trucks and railroad trains, fourteen were caused by pedestrians being hit by a motor vehicle, ten were due to the vehicle running off the road, and five were deaths of passengers who were thrown out or fell out of this type of conveyance.

The Commission has arranged with E. Raymond Cato, Chief of the California Highway Patrol, for conferences leading to combined action to reduce these types of industrial fatalities. The Commission has jurisdiction over all places of employment, and a truck or an automobile when driven by an employee is a place of employment.

The Department of Motor Vehicles enforces the provisions of the California Vehicle Act and other Acts respecting the use or operation of vehicles upon the public highways.

When it is considered that a very few years ago there were no industrial fatalities due to this class of equipment and that now these have reached a point where they represent 24 per cent of all industrial fatalities, it will be understood why the Commission is exceedingly anxious to develop some means for their reduction.

There may be some variation from the figures given above, as some of the cases now reported as industrial may later be found to be not industrial and others which are not classed as industrial may be industrial and some of those who have been injured may later die from the effects of the injury.

Good Food Advertising.* — Housewives and those who purchase foods should make it a habit to consider carefully advertising for foods. The buyers of foods pay for food advertising on which hundreds of millions of dollars are spent each year. A certain percentage of the price paid for packaged foods goes to cover the cost of the advertising. It is a kind of indirect tax food purchasers pay for food advertising.

* By Raymond Hertwig, secretary of the Committee on Foods of the American Medical Association.

(Continued on Next Page)

PROFESSIONAL PROTECTION

SINCE 1899
SPECIALIZED
SERVICE

A Doctor Says:

"25 years, no suits—then 3 in rapid succession. * * * for The Medical Protective Company every professional man should utter a prayer of thanksgiving."

THE
MEDICAL PROTECTIVE COMPANY
OF FORT WAYNE, INDIANA
WHEATON, ILLINOIS

(Continued from Preceding Page)

This advertising tax is justified if the advertising is truthful. There are no arguments, however, to justify untruthful advertising created to misinform and deceive the food buyer, who himself must pay for that advertising.

Housewives and the purchasers of foods can stop false advertising by not buying foods that are falsely advertised and by buying those foods which are truthfully advertised. Every person who buys only those foods which he knows from authoritative sources are truthfully advertised is doing a real public service. Selective buying of truthfully advertised foods only is a public welfare service. Housewives can force deceptively advertised foods off the market by intelligent buying.

It is now possible to recognize many foods which are truthfully advertised by looking for the seal of the Committee on Foods of the American Medical Association. That committee, without remuneration, is accepting foods which are voluntarily submitted by manufacturers and which fulfill nutritional requirements and are truthfully advertised. The seal of the committee on the package label and in the advertising tells you that the foods and the advertising are satisfactory. Foods accepted by this committee merit your attention and support. Housewives have it in their power to induce food manufacturers to make their products and advertising accord with the requirements of the committee by buying accepted foods. They can thus compel truthful advertising for all foods quicker and more efficiently than can the law.

Housewives should know what the committee considers good advertising; such knowledge will help in determining the difference between good and truthful advertising and bad or untruthful advertising. Housewives who are responsible for the nutrition and health of their families should know what the committee says about many common untruthful misleading claims being made for foods.

Food advertising must be considered from the point of view of both the public and the food merchandiser. Sound advertising effectively serves the interests of both. The continued welfare of the food industry rests largely on the dedication of its advertising activities to the good of the public. It is essential, therefore, to define proper food advertising.

Proper food advertising should use the common name of the food concerned, or in the case of a fanciful trade name should identify the ingredients in the order of their decreasing proportions in the product. Such practice prevents deception. Any statement of the physical, chemical, nutritional or physiologic properties and values of the food should be truthful and expressed in simple common terms. Proper advertising is free from false implications. It does not create incorrect or improper inferences or comparisons between foods. It attempts to promote sales solely on the merits of the food article itself.

Good food advertising harmonizes with established authoritative knowledge popularly expressed. Meritorious foods require no exaggerated, false, misleading claims. The inferior food with alleged fictitious values requires gross superlatives and exaggerations, and flamboyant, vague and mysterious claims. Good advertising discusses nutritional values, but avoids specific health claims; it recognizes that health depends on diet as a whole and on many factors other than foods, and not on any one type of food.

The Committee on Foods is acting for the American Medical Association to protect the public against undesirable foods and false advertising. Look for the committee's seal.—*Food Facts.*

Lopsided Diets.—An advertisement for animal food was recently noted which introduced the product with the caption, "Plenty to Eat but a Lopsided Diet." This statement could well be applied to thousands of

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An institution devoted to the study and treatment of malignant or benign tumors and allied disease by radiological and electro-surgical methods.

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Tumor Pathology
A. H. WARNER, Ph.D.,
Physicist

citizens, stated Dr. Theodore B. Appel, Secretary of Health of Pennsylvania.

Too frequently members of the feminine contingent suddenly become more or less sensitive to avoirdupois and take heroic steps to remedy the situation. Entirely ignoring the fact that months, and likely years, were involved in acquiring the extra weight, they take to a lopsided diet like a duck does to water and frequently suffer as a result. A fair proportion of men can also be indicted for this offense.

On the other hand, there are a great many more men and women whose overly rotund physiques are acquired and maintained by a lopsided diet also. However, in this instance it is from an undue affection for the fat-producing, rather than fat-removing, provender. And so, whether one is fat and wants to get thin, or is fat and does not care, the statement "plenty to eat but a lopsided diet" equally applies.

When it comes to reducing, lopsided diets should be definitely avoided. And the best way to follow this injunction is to seek professional advice regarding one's reducing ideas. Indeed, to tamper with one's body by following personal notions regarding diet or the ideas of a so-called "nutritional expert," is to take a chance with health that is entirely unjustified. By the same token, if one is noticeably overweight, it might be well to seek counsel from the family physician, on general principles.

The encouraging fact in these suggestions is that extremes will be avoided in both instances, and the "golden mean" suitable to the particular individual will be advocated. It should be understood that the average person is entirely too individual a proposition to rely upon a mass rule to attain (upward or downward) proper weight.

Speaking generally, however, food fancies and diet plans that emphasize a certain type of provender are not usually required by those who desire to take off weight or attain average poundage. Lopsided diets most emphatically should be avoided.—*Food Facts.*

Pioneer Specialists in Dairy Products

SINCE 1905 the name Golden State on a dairy product has been synonymous with quality. Golden State Dairy Products have set a standard in richness, purity and flavor—quality that never varies the year round.

Golden State Dairy Products meet every public health requirement, and *in addition* they meet Golden State's own rigid specifications. As a result of this Company's private research, in addition to its intelligent application of the findings of public research in the field of dairy science, no brand of dairy products excels the Golden State Brand. Under this long-established brand, a complete line of dairy foods is available—milk, butter, cream, buttermilk, cottage cheese, ice cream, cheese, acidophilus milk, evaporated milk and malted milks. Also this Company complies with the full requirements of the medical profession for special milks to meet the peculiar needs of individual cases.

Golden State Company, Ltd., solicits the personal patronage of members of the California Medical Association. Plants are located in all principal California cities and towns.

GOLDEN STATE DAIRY PRODUCTS

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COMPANY, LTD.
DAIRY PRODUCTS

Research Laboratories:
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Colfax School for the Tuberculous

Colfax, California

(Altitude 2400 feet)

This institution is for the treatment of medical tuberculosis and of selected cases of extrapulmonary (so-called surgical) tuberculosis.

The Colfax School for the Tuberculous consists of five Hospital Units with beds for patients who come unattended and a Housekeeping Cottage Colony for patients and their families.

The Colfax School for the Tuberculous offers the following advantages:

1. Patients are given individual care by experienced tuberculosis specialists. The patient is treated according to his individual needs.

2. Patients are taught how to secure an arrest of their disease, how to remain well when once the disease is arrested, and how to prevent the spread of the disease.

3. Patients have the advantage of modern laboratory aids to diagnosis and of all modern therapeutic agencies.

4. The climate of Colfax enables the patient to take the cure without discomfort twelve months in the year. We believe climate is secondary to medical supervision and rest, but the fact remains that it is easier to "cure" under good climatic conditions than where these climatic conditions are absent.

5. Colfax is accessible. It is on the main line of the Ogden Route of the Southern Pacific R. R. and has excellent train service. It can be reached by paved highway, being on the Victory Highway, with paved roads all the way to Colfax.

For further information address

ROBERT A. PEERS, M. D., *Medical Director*
Colfax, California

NEXT ANNUAL SESSION
California Medical Association, Yosemite National Park, May 13-16, 1935

CALIFORNIA
AND
WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME 41
NUMBER 2

AUGUST · 1934

50 CENTS A COPY
$5.00 A YEAR

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"Entered as second-class matter at the post office at San Francisco, under the Act of March 3, 1879." Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

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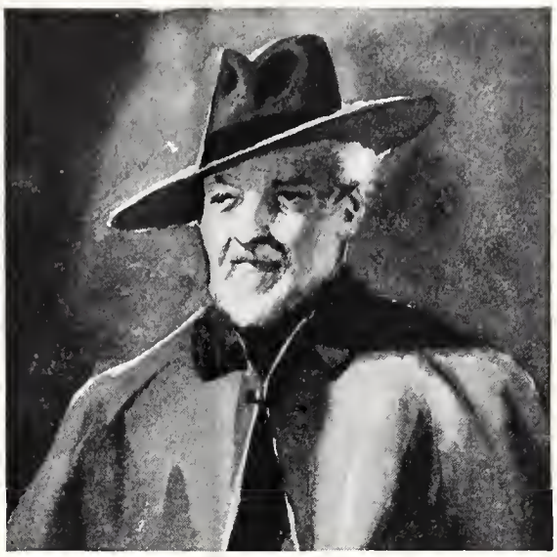

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Hospitals and Sanatoriums

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ALEXANDER SANITARIUM
Nervous and Mild Mental Diseases
Belmont, California

CALIFORNIA SANITARIUM
For Treatment of Tuberculosis
Belmont, California

CANYON SANATORIUM
For the Treatment of Tuberculosis
Redwood City, California

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For the Treatment of Tuberculosis
Colfax, California

COMPTON SANATORIUM AND LAS CAMPANAS HOSPITAL, COMPTON
Neuropsychiatric and General

DANTE SANATORIUM
Limited General Hospital
Van Ness and Broadway, San Francisco

FRANKLIN HOSPITAL
Limited General Hospital
Fourteenth and Noe Streets, San Francisco

FRENCH HOSPITAL
General Hospital
Geary at Fifth Avenue, San Francisco

GREENS' EYE HOSPITAL
Consultation, Diagnosis and Treatment of Diseases of the Eye
Bush and Octavia Streets, San Francisco

THE GREER HOME, Inc.
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6000 Fulton Street, San Francisco

LAS ENCINAS SANITARIUM
Nervous and General Diseases
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LIVERMORE SANITARIUM
Nervous and General Diseases
Livermore, California

POTTENGER SANATORIUM AND CLINIC
For the Treatment of Tuberculosis
Monrovia, California

PARK SANITARIUM
Mental and Nervous, Alcoholic and Drug Addictions
1500 Page Street, San Francisco, California

SOUTHERN SIERRAS SANATORIUM
Treatment of Tuberculosis
Banning, California

SAINT FRANCIS HOSPITAL
Limited General Hospital
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CALIFORNIA AND WESTERN MEDICINE, the Journal of our Association, in its present form, is made possible in part because of the generous coöperation of firms who believe that its pages can successfully carry a message concerning their products to a desirable group of present and future patrons.

The five thousand and more readers of CALIFORNIA AND WESTERN MEDICINE often have occasion to purchase articles advertised in this publication.

Other things being equal, it would seem that reciprocal courtesy and coöperation should lead our members to give preference to those firms who place announcements in our publication.

Coöperation might go even farther than that. When ordering goods from our advertisers, mention CALIFORNIA AND WESTERN MEDICINE. By the observance of this rule, a distinct service will be given your Association, its Journal and our advertisers.

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THE JOURNAL of the American Medical Association and the A. M. A. Coöperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

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Perhaps you want a certain kind of instrument which is not advertised in CALIFORNIA AND WESTERN MEDICINE, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This A. M. A. Service Bureau will give you the information. Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to write direct to the Coöperative Medical Advertising Bureau, 535 N. Dearborn Street, Chicago, Illinois. CALIFORNIA AND WESTERN MEDICINE and the A. M. A. Service Bureau desire to serve *you*.

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DESIGNED FOR PHYSICIANS IN SAN FRANCISCO AND VICINITY

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The course will include a foundation in Anatomy, Surgical Pathology, Diagnosis, and Operative Technic. As supplementary to the work on cadavers, dogs and fresh human material, lectures and demonstrations will be given on living subjects by leading surgeons of San Francisco.

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Applicants must be graduates of schools approved by the State Board of Medical Examiners

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Changes Among Health Officers.—Dr. P. D. Miller has been appointed city health officer of Dinuba in Tulare County to succeed Dr. Charles S. Mitchell.

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Recently the Government seized 499 cases of "Old Grand-dad" whisky, shipped by the American Medicinal Spirits Company, Inc., Louisville, Kentucky, to the firm's place of business in Chicago, Illinois. The whisky was grossly misbranded with remedial claims for a number of diseases, including pulmonary conditions, stomach complaints, la grippe, "typhoid and other low fevers." The label went on to say that the whisky could also be used to render the system immune from various diseases and externally for ulcers.

Another recent seizure initiated by the Food and Drug Administration removed from the market several hundred bottles of "Old Nectar" whisky, which was labeled with remedial claims for bronchitis, influenza, and other maladies. The whisky was shipped from a New York City warehouse to a Baltimore branch of the firm. The Government charged that the whisky was falsely and fraudulently labeled as to its curative claims and that, additionally, it did not comply with the requirements of the United States Pharmacopeia.

Physicians should steep themselves in the humanities. The sort of culture they need is best obtained by familiarity with poets, philosophers, biographers, musicians, and art. I am convinced that the medical student who knows the great classics of the past is better equipped to practice medicine than he who has medical textbooks at his finger tips. The welfare of the soul is enhanced by culture.—Dr. Joseph Collins.

* Press service of the United States Department of Agriculture.

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Director

Mission Canyon Road
Santa Barbara, California

BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

Spinal Anesthesia. Technic and Clinical Application. By George Rudolph Vehrs, M. D., Salem, Oregon. Cloth. Pp. 269, illustrated. Price, $5.50. St. Louis: The C. V. Mosby Company, 1934.

Surgery of a General Practice. By Arthur E. Hertzler, M. D., Chief Surgeon, Halstead Hospital; Professor of Surgery, University of Kansas, and Victor E. Chesky, M. D., Chief Resident Surgeon, Halstead Hospital. Cloth. Pp. 602, with 472 illustrations. Price, $10. St. Louis: The C. V. Mosby Company, 1934.

Die Periodische Fruchtbarkeit und Unfruchtbarkeit des Weibes. Der Zur Natärlichen Geburtenregelung. By Professor Dr. Hermann Knaus, O. Assistent an der Universitäts-Frauenklinik in Graz. Mit 64 Abbildungen und 12 Tabellen. Wien: Verlag Von Wilhelm Maudrich, 1934.

United States Naval Medical Bulletin. Published Quarterly for the Information of the Medical Department of the Navy. Issued by The Bureau of Medicine and Surgery, Navy Department, Division of Publications. Commander Louis H. Roddis, Medical Corps, United States Navy, in charge. Compiled and published under the authority of Naval Appropriation, Act for 1934, approved March 3, 1933. Paper. Price, 25 cents. Washington: United States Government Printing Office, 1934.

That Heart of Yours. By S. Calvin Smith, M. D., Sc. D., author of "Heart Affections: Their Recognition and Treatment," etc. Cloth. Pp. 212, illustrated. Price, $2. Philadelphia: J. B. Lippincott Company, 1934.

Manual of the Diseases of the Eye. For Students and General Practitioners. By Charles H. May, M. D., Director and Attending Surgeon, Eye Service, Bellevue Hospital, New York, 1916 to 1926; Consulting Ophthalmologist to the Mt. Sinai Hospital, to Bellevue Hospital, to the French Hospital, New York, and to the Monmouth Memorial Hospital. Fourteenth edition, revised. Cloth. Pp. 496, with 376 original illustrations, including twenty-five plates, with seventy-eight colored figures. Price, $4. Baltimore: William Wood and Company, 1934.

BOOK REVIEWS

Medicine—a Voyage of Discovery. By Josef Löbel. New York: Farrar & Rinehart. 1934.

Josef Löbel has written a popular book concerning the advances medicine has made during the past hundred years. Previous to this, although much had been learned of the nature of disease and of the application of remedies, there was such a vast accumulation of erroneous views and incorrect observations that the false obscured and interfered with the true. There had been, before this era, learned physicians, and some who had remarkable vision such as Fracastor, and there had also been excellent surgeons, but the mass of the profession had neither learning nor skill, and the invisible natural laws, those invaluable acquisitions both for medicine and for the public, had not been discovered. The introduction of the scientific methods of direct observation and exact experimentation has resulted in such a number of brilliant discoveries as to furnish an author such as Josef Löbel with abundant material for an interesting book, and this book is no mere dry enumeration of facts, but is enlivened with incidents and anecdotes which contribute decidedly to the pleasure of reading it. For instance, a physician in Hamburg was afflicted with a desire to see a woman in parturition. He was caught by the midwives, tried in a court of law, and burnt at the stake. We now consider it strange that a graduate in medicine should not have seen and studied this interesting function or, if it so chanced that he had not seen it, his action would be regarded as at least evincing a laudable curiosity. His crime, however, probably lay in the fact that he overstepped the limits of his own profession and invaded the province of the midwives, who undoubtedly accused him, not of invasion of their rights, but of lack of modesty. Unions at that time, just as in the present day, undoubtedly made use of every sentimental argument to maintain their closed shop. Our author also relates that in Altona, a town in close proximity to Hamburg, a doctor found it necessary to state that regardless of class or sex, patients should submit to the recently introduced method of examining the chest by percussion. Here again, in carrying out this procedure, he probably was encroaching on the preserves of the barber-surgeons. One can see by this what a narrow path the healer of the sick had to tread in the practice of his profession, and it may be that before long, with an increase of the union spirit, we may again be made to suffer similar restrictions.

For those who are interested in psychoanalysis and in the ideas and speculations of Freud and his contemporaries there are several chapters showing how these subjects are now regarded in the German-speaking countries.

There are many typographical errors in the book, but these may be overlooked in a work of such general interest.

D. W. M.

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3000 feet up in the Lake County Pines. Good roads all the way.

A pleasure and health resort

for the whole family. The only iron and manganese bicarbonate spring in Western America.

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Evans: Essays on Chronic and Familial Syphilis	3.00
Pemberton: Medical and Orthopedic Management of Chronic Arthritis	5.00
Vaughan: The Anemias	4.00
Watson: Life of Sir Robert Jones	3.75
Wright: Applied Physiology (5th edition)	5.50

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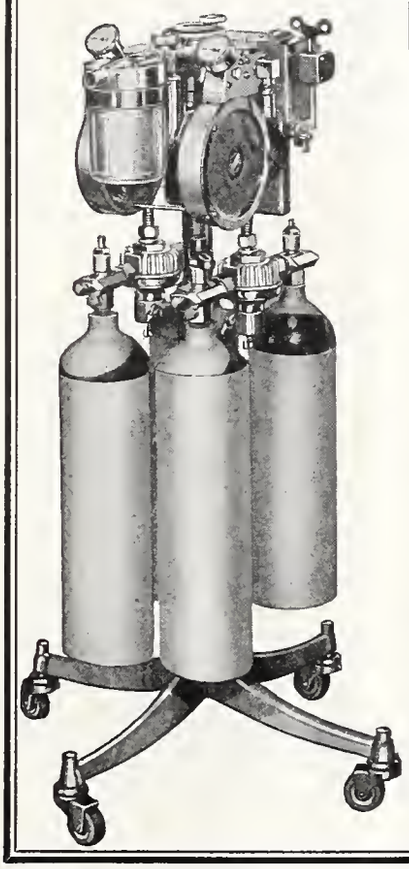

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immediate service

on

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Consultation Solicited

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Quality and Service Since 1912

1117 MARKET ST. 460 POST ST.

TWENTY-FIVE YEARS AGO

(Continued from Text Page 144)

From an article on "Trichinosis" by A. M. Tower, M.D., Lodi.

Trichinae are widely distributed, because of the wandering of rats, and, no doubt, inhabit the muscles of all carniverous animals. . . .

From an article on "Sanitary Supervision of Communicable Diseases by the Department of Public Health" by R. G. Brodrick, M. D., San Francisco.

The control of infectious diseases by sanitary regulations is one of the notable achievements of modern times. It is stated that the death rate during the seventeenth and eighteenth centuries ranged between 50 and 80 per 1000. Today in such cities as New York, London and Berlin, the average is 17 to 19 per 1000; in San Francisco it has been reduced 13 per 1000. . . .

From an article on "Galactoxismus" by W. W. Roblee, M. D., Riverside.

During the year just passed, more consideration has been given to the subject of pure milk supply than ever before. Practically all the studies, however, have been made with reference to sanitary methods of handling and the various forms of adulteration practiced by the dealers. It seemed to me that we might, with benefit, consider one or two phases of the subject which have not been given so much study. . . .

From an article on "Chyluria with a Vesical Sinus" by Saxton Pope, M. D., Watsonville.

I don't know who invented chyluria. My early reading of the Bible leaves no memory of any reference

(Continued on Page 14)

ANTISEPTIC SOLUTIONS *for* MUCOUS MEMBRANES

THE antiseptic solution to be applied to a delicate membrane should preferably be non-irritating; yet it should be effective.

Neo-Silvol solutions are bland; they may be used in the eye without injuring or irritating the conjunctiva. But Neo-Silvol is an effective antiseptic agent, useful in affections of the eye, nose, throat, and genito-urinary tract.

Neo-Silvol solutions up to 50% strength may be made without difficulty, dropping the crystals into water and shaking in a stoppered bottle.

Neo-Silvol solutions are practically non-staining.

Neo-Silvol (Colloidal Silver Iodide Compound) is supplied in 1-ounce and 4-ounce bottles; also in bottles of 50 and 500 six-grain capsules.

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DEPENDABLE MEDICATION BASED ON SCIENTIFIC RESEARCH

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The Hydropathic Department devoted to the treatment of general diseases excluding surgical and acute infectious cases. Special attention given functional and organic nervous diseases. A well equipped clinical laboratory and modern X-ray Department are in use for diagnosis.

The Cottage Department (for mental patients) has its own facilities for hydropathic and other treatments. It consists of small cottages with homelike surroundings, permitting the segregation of patients in accordance with the type of psychosis. Also bungalows for individual patients, offering the highest class of accommodation with privacy and comfort.

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2. Indoor and outdoor gymnastics under the charge of an athletic director. An excellent Occupational Department.
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TWENTY-FIVE YEARS AGO

(Continued from Page 12)

to the subject; not even in the Book of Job. Possibly the Eber's papyrus mentions it, but I am not good at Egyptian hieroglyphics.

Whether Hippocrates and Galen dwelt upon the subject, I cannot tell you. But I have read that Gubler, in 1858, first suggested that chylous urine was due to the passage of chyle directly into the urinary tract, and that Wucherer first detected an unknown worm in the urine of a woman at the Misericordia Hospital at Bahia in 1866. . . .

From an article on "Professional Work as It Connects with the Medical Society and the General Public" by William T. Barry, M.D., Santa Barbara.

I ask you to step aside for a few moments from the purely scientific path and consider with me professional work as it connects with our duties toward the medical society and the general public. By the medical society I mean more especially the county association (though in principle I include also the state and national bodies) and by the general public I mean the people locally, among whom we may be practicing our profession (though here again we will naturally broaden out into the state and nation). . . .

From an article on "The Toxemic Factor in Rheumatoid Arthritis" by Carl C. Warden, M.D., Los Angeles.

Briefly summarized, the factors etiologically associated with the variety of arthritic conditions grouped under the name of rheumatoid arthritis, are the nervous, the bacterial, and the toxic. The classification of the arthritic troubles themselves is not so easy or so brief. . . .

From an article on "The Relation of Rat Leprosy to Human Leprosy" (With an Exhibit of Gross and Microscopic Specimens) by William B. Wherry, M.D., San Francisco.

It seemed worth while, in connection with Doctor Clark's exhibit of cases of human leprosy, to show you some specimens from a very closely related, if not identical, disease which occurs in the rat. . . .

A Few Kind Words.

June 3, 1909.

California State Journal of Medicine, Addressed:

"I am writing this to offer you my congratulations on your good work to rid the medical profession of incompetency ad commercialism.

"The *Journal of the American Medical Association* and the *California State Journal of Medicine* are doing more for the cause of honesty and to dislodge grasp of the nostrum vendors from the profession than all the other medical journals combined. . . .

"Very sincerely yours,
"M. M. C."

BOARD OF MEDICAL EXAMINERS

(Continued from Text Page 144)

Benjamin Balos, former president, and J. W. Lee, listed as the president, on complaints charging them with conspiracy to commit petty theft and conspiracy to cheat and defraud." (Associated Press dispatch, dated Los Angeles, July 12, 1934, and printed in the San Francisco *Examiner,* July 13, 1934.)

"R. A. Sill, insurance salesman and one of the nineteen persons indicted in a recent 'health insurance

(Continued on Page 16)

The easier Way to Vaccinate with Smallpox Vaccine Mulford

Busy physicians appreciate the time-saving MULFORD TUBE-POINT. Four simple operations.

Place rubber bulb on small end of tube-point and break the tip inside the bulb.

Break the tube-point at the file mark without contamination of the tip.

Expel the virus from the tube directly on the previously cleansed area of the skin.

Transfer tube-point to right hand. Holding point parallel to the skin surface, apply pressure through the virus, with an up-and-down motion, repeated 20 to 30 times.

THE Mulford Improved Capillary Tube-Point brings speed and greater safety to smallpox vaccination. It is a sterile, sealed vaccine container and inoculating instrument all in one.

This unique, time-saving container is ready for immediate use with any of the approved technics—multiple pressure, puncture, or scratch.

Smallpox Vaccine Mulford delivers a high percentage of "takes" . . . it is uniform . . . it carries assurance of potency and purity, because exhaustive tests are carried out on each lot before release.

Smallpox Vaccine Mulford is backed by 35 years' continuous experience and research. It is a vaccine you can rely on.

Smallpox Vaccine Mulford is available in the following packages: Capillary Improved Tube-Points—Single's and Ten's. Capillary Tubes—Ten's.

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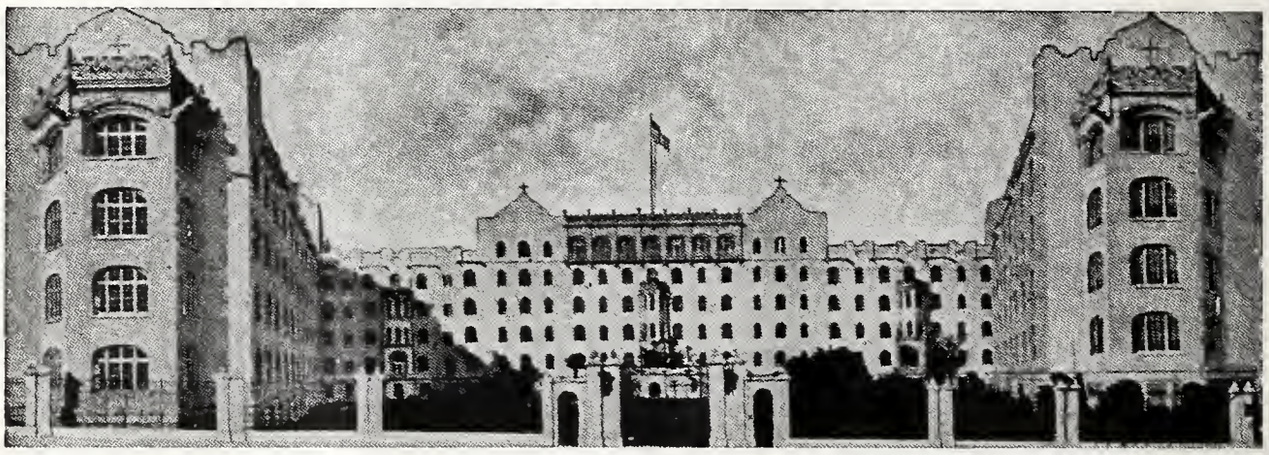

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Edward Topham, M.D., F.A.C.S.
James Eaves, M.D.
Hubert R. Arnold, M.D., F.A.C.S.
T. T. Shea, M.D.
Edmund Butler, M.D., F.A.C.S.
Rodney A. Yoell, M.D.
W. W. Fritschen, A.B., M.D. F.A.C.S.
D. W. Sooy, M.D.

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George F. Oviedo, M.D.
Thomas E. Gibson, M.D., F.A.C.S.

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H. V. Hoffman, M.D.
Stephen Cleary, M.D.
A. Diepenbrock, M.D.
J. H. D. Roger, M.D.
Thomas J. Lennon, M.D.
James M. Sullivan, M.D.

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Wm. W. Newman, M.D.

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C. C. Mohun, M.D.

Eye, Ear, Nose and Throat
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L. A. Smith, M.D.
J. J. Kingwell, M.D.
T. Stanley Burns, M.D.
F. B. Hand, M.D.

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J. J. Loutzenheiser, M.D.
V. Dillon, M.D.

Pediatrics
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Neurological Surgery
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Gastroenterology
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Frank A. Kinslow, M.D.

Neurology
Milton B. Lennon, M.D.

Dermatology
Harry E. Alderson, M.D.

Pathology
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Alkalinity, of course, neutralizes *acidity.* And Limas are one of the most alkaline foods known—41.65 per 100 grams!

To meet a definite demand from the medical profession, we have developed, to a high degree of fineness, a Lima Bean FLOUR—for making non-acid breads, muffins, pancakes and waffles for Basic Diet menus!

Lima FLOUR—is available in 10-lb. bags at $1.20, and in 100-lb. bags at $10.00. Upon receipt of price and delivery instructions your order will be shipped parcel post or express collect. Send orders, and make check or money order payable to—

CALIFORNIA LIMA BEAN
GROWERS ASSOCIATION

Oxnard, California

BOARD OF MEDICAL EXAMINERS

(Contnnued from Page 14)

racket,' pleaded guilty yesterday before Superior Judge Fred V. Wood of Oakland to one indictment of conspiracy to commit theft. Sill told the court that he worked only a few days for Harry Kramer, alleged leader of the racket, now in San Quentin. Sill will be sentenced on Monday morning." (San Francisco *Chronicle,* June 15, 1934.)

"Secretly indicted by the Federal Grand Jury yesterday, nine officials of the National Security Life Association, Beverly Hills, were placed under arrest today on charges of conspiring to use the mails in a scheme to defraud policyholders. The officials are accused of making false representations to prospective purchasers of life, sickness and accident insurance throughout the country. Postoffice inspectors said organizers of the company came here from Chicago in October, 1931, and have operated under various company names. . . . Those indicted were Abe L. Rose, president; Donald L. Rose, Sidney G. Rose, and O. M. Rosenthal, vice-presidents; D. S. Kent, secretary-manager; B. Kent, cashier; B. Abrams, secretary ex officio; Arnold D. Krieger, legal adviser; and Dr. G. H. Lew, medical director. The indictment gave the following firm names as some of those under which it was charged the defendants had operated: Sterling Underwriters, Inc.; the Sterling Penny-a-Day, Ltd.; Sterling Policies, Sterling Association, United States Life Association, Sterling Security Life Association, National Security Life Association, National Security Association, Pacific National Association, Guaranty Union Life Insurance Company, and American Agency." (Associated Press dispatch, dated Los Angeles, June 21, 1934, and printed in the San Francisco *Examiner,* June 22, 1934.)

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"Bail of $500 was forfeited by 'Dr.' Aris Amaral, Hollywood mystic, when he failed to appear before Municipal Judge Newcomb Condee today for trial on charges of practicing medicine without a license at his 'Temple of Isis,' in Hollywood. . . ." (Los Angeles *Herald-Express,* July 5, 1934.)

"'Dr.' Willard E. Judge (as he was known in Pasadena), object of an intensive manhunt, was in jail here today, charged with suspicion of grand theft of an automobile and issuance of fictitious checks. . . . Chief Kelley directed that the man's fingerprints and photographs be at once sent to state and national identification bureaus to find out what, if any, is his past record. Technically the man is charged with suspicion of having impersonated a doctor and member of the Los Angeles City Health Department. . . ." (Pasadena *Star-News,* June 27, 1934.) No such individual is recorded as a physician and surgeon in this State.

"An ex-convict, posing as a physician, and believed by the police to have operated in Sacramento, Oakland, and Chicago, was arrested here today in the act of making a wholesale narcotic sale. The man is E. C. Moore, alias Earle L. Clybourn, M. D. . . . Moore, a former naval medical apprentice, is declared by the arresting officers to have posed as a physician, even to his wife, while he sold narcotics, wrote prescriptions and fictitious checks. . . . Moore admitted to the officers he posed as a physician in both Chicago and Oakland, and confessed to passing numerous fictitious checks in Oakland. . . . Moore was released from San Quentin prison in 1929 after serving a term for issuing worthless checks . . ." (Sacramento *Bee,* July 3, 1934). Among this man's effects at the time of arrest was found a California reciprocity application which he had filled out in the name of Earle Llewellyn Cly-

(Continued on Next Page)

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ANAESTHETIC EQUIPMENT
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First Day:
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LOS ANGELES
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Plus oxygen at $4.50 per cylinder of 1650 gallons

Out of town rates as above plus reasonable additional charges according to distance.

Bedside units with mask and Litre flow gauge, $5.00 per week plus oxygen.

STUART CO.
OXYGEN
SAN FRANCISCO OAKLAND
LOS ANGELES
OUR PLANT IS OPEN 24 HOURS A DAY

BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

bourn, claiming that he attended Rush Medical School, Chicago, from 1920 to 1924, and held an M. D. degree issued by said institution dated June 6, 1924. He also claimed to hold an Illinois license (No. 2885, B) issued June 3, 1924. Had he filed this application with the Board of Medical Examiners, he would have been charged with a felony under the provisions of the diploma mill bill, Chapter 79, Statutes 1927.

According to the Sacramento *Bee* of July 9, 1934, Hugh M. Berry, who claimed to have practiced medicine in California, was reported recently arrested in Honolulu while on his honeymoon, charged by the Department of Justice agents with bigamy and with being a parole violator following his conviction under the Mann Act. No record can be found that Hugh M. Berry holds a license under Medical Practice Act of this State.

According to the Glendale *News-Press* of June 30, 1934, Dr. LeRoy O. Schulz, 38-year-old Glendale physician, was among five individuals "held in the county jail in default of $5,000 bail each" on a charge of "conspiracy to harbor criminals."

"The strange case of the disappearing white corpuscles, a condition that means almost certain death, has been solved by Emory University scientists. . . . Dr. R. R. Kracke has found the condition is caused by the taking of certain pain-killing or fat-reducing drugs, it was announced today. . . . Doctor Kracke said the drugs, chiefly amidopyrin and its compounds . . . and dinitrophenol, used in recent years for 'reducing,' atatck the bone marrow, where the body has established factories for the manufacture of white corpuscles." (Associated Press dispatch, dated Atlanta, June 20, 1934, printed in the San Francisco *Examiner*, June 21, 1934.)

"Dr. Stanley Boller, 4759 Hollywood, furnished a $3,500 bond before United States Commissioner David B. Head on a complaint charging him with selling ten grains of morphin to a federal operative without a prescription. He waived hearing and was ordered held for action of the Grand Jury." (Los Angeles *Examiner*, June 14, 1934.)

"Federal narcotic agents yesterday, in Inglewood, arrested Dr. David McLeod Roberts, physician of 312 East Manchester Avenue and Claude A. Porter, alleged narcotic addict, on charges of conspiring to violate the Harrison Drug Act. The physician was said to have unlawfully furnished Porter with morphin which the latter allegedly sold in Los Angeles." (Los Angeles *Examiner*, June 16, 1934.)

"Frequent verbal clashes between federal, state, and local officers and Dr. James S. West, president of the International White Cross Anti-Narcotic League, now

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BELMONT 111

planning a fund-raising campaign in Los Angeles, today marked a hearing before the Civil Service Commission. The Commission had been asked to issue an official information card in connection with the proposed campaign. Often during the meeting the officials charged that the White Cross was a 'stumbling-block' in the way of narcotic enforcement agencies and that representatives of the organization on numerous occasions have sought to protect dope peddlers. 'This group is constantly trying to undermine law enforcement bodies and has done its best to "spring" certain dope peddlers,' Sanborn Young, special representative of the Federal Narcotic Bureau, told the Commission. W. G. Walker, head of the State Narcotic Bureau, and Captain Harry Seager of the Los Angeles police department, who formerly headed the Bureau, also asserted that the White Cross persisted in attacking and interfering with law enforcement. . . . Dr. H. L. Herberts, acting president of the Commission, told the officers that the Social Service Department is obligated by ordinance to issue the information card, but that the data on the card may show whether the cause is worthy or unworthy. Doctor West announced that the White Cross had acceded to the Commission's demand for a local board of directors, to direct the Los Angeles campaign, and that everything possible would be done to 'atone' for mistakes admittedly made during a previous local campaign, when solicitors were assertedly able to apply to their personal use a large part of the sum collected. . . ." (Los Angeles *Herald-Express,* June 19, 1934.)

"Ralph Bargas, seventeen, returned from the Springville sanitarium by his parents to be placed under the care of 'Dr.' Juan Delgado, aged Apache medicine man, died in the county hospital at Tulare this morning. . . . The youth was in the last stages of tuberculosis, but because he had been taking herb mixture furnished by Delgado, a postmortem will be conducted this afternoon to ascertain whether or not the nostrum contributed to the boy's death. . . ." (Visalia *Times-Delta,* June 13, 1934.)

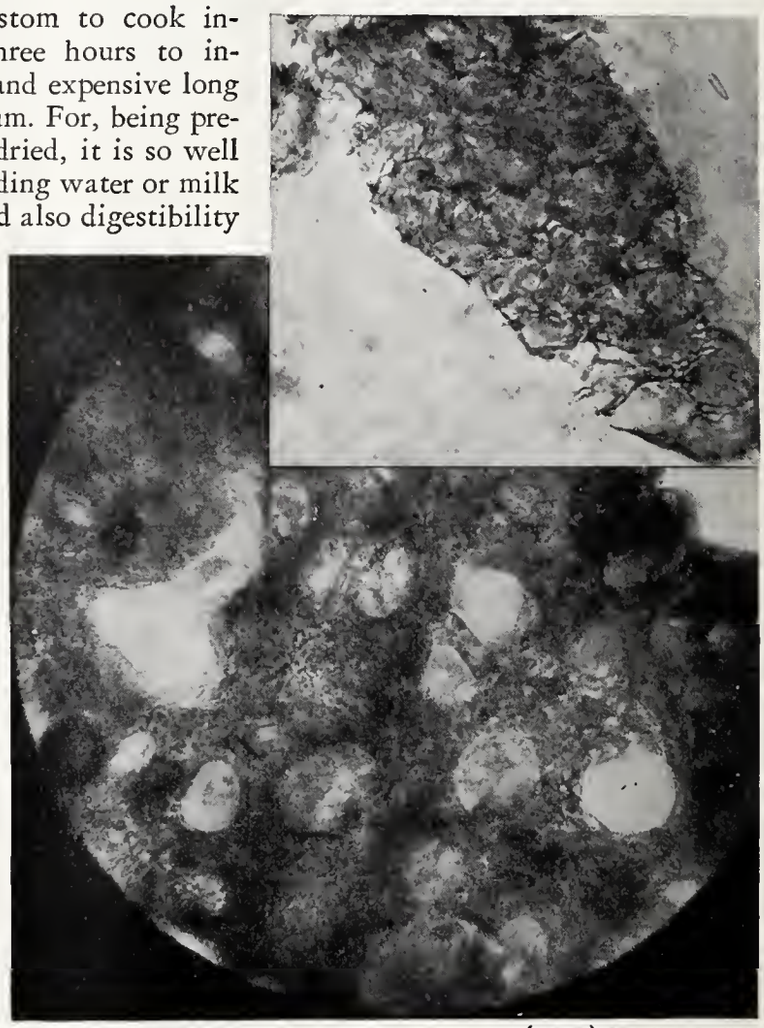
"The mere printing by a physician of an advertising booklet containing false statements or statements tending to deceive the public is not a violation of the State Medical Act unless the advertisement is placed in the hands of third parties, and the same does not furnish a basis for discipline of such physician, according to a ruling handed down Wednesday, June 13, by Superior Judge Emmet H. Wilson, in the action brought by Clayton E. Wheeler against the Board of Medical Examiners to review their action in placing Doctor Wheeler on probation. Doctor Wheeler was tried before the state board on two complaints, one alleging that he printed and distributed an advertising booklet containing photographs of a laboratory represented to belong to the doctor and which was the property of one O. S. Schmidt, the other complaint charging that the booklet contained statements that the physician had previously occupied positions with the San Francisco Hospital and Stanford University which he had not actually held. Judge Wilson ruled that the evidence introduced before the Board of Medical Examiners *was sufficient to sustain the allegations* that the pamphlet was printed under the direction of Doctor Wheeler and that the statements alleged to have been

(Continued on Page 21)

Why Starch of PABLUM *Is More Quickly Digested* than that of Long-cooked Cereals

FOR many years it has been the custom to cook infants' cereal one, two, and even three hours to increase its digestibility. This bothersome and expensive long cooking is proven unnecessary with Pablum. For, being precooked at 10 pounds steam pressure and dried, it is so well cooked that it can be served simply by adding water or milk of any temperature. Photomicrographs and also digestibility studies *in vitro* give evidence of this thorough cooking.

Fifteen cereals (both cooked and uncooked) studied microscopically were revealed as containing many starch granules, most of them massed into dense clumps. *Such unruptured clumps were never observed in hundreds of examinations of Pablum.* The latter consists, rather, of porous flakes which, like sponges, drink up liquids. Hence Pablum can be entirely saturated by the digestive secretions. This is borne out by studies of Ross and Burrill who found that the starch of Pablum is more rapidly digested than that of ordinary cereals cooked 4 hours.

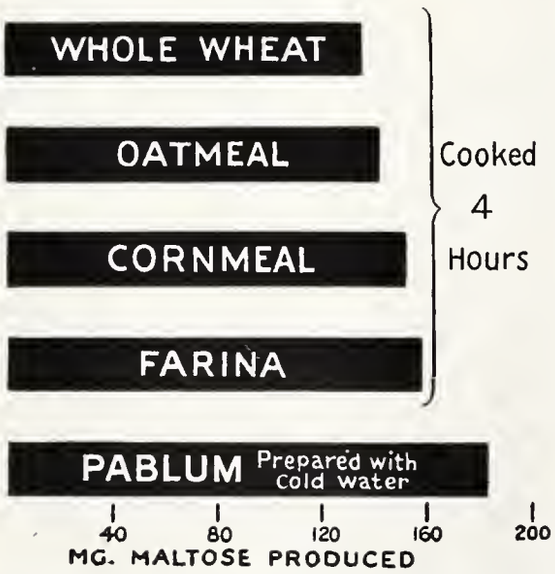


140 X. STAINED (INSET) 290 X. STAINED

Large photomicrograph: Pablum mixed with cold water —portion of large flake. Pablum flakes are honeycombed with "pores" or air-spaces (note light areas). This porosity permits ready absorption of digestive fluids by the entire flake. No starch granules appear—they have been completely ruptured.

Inset: Farina cooked ½ hour—clump of tissue including starch granules. Note density of clump and lack of porosity. Many starch granules, such as are present in raw cereal, remain unchanged in form.

Table shows that maltose production is much greater for Pablum prepared with cold water than for other cereals cooked 4 hours. Ross and Burrill (J. Pediat., May 1934) conclude from this and from the total soluble carbohydrate formed that starch digestion of Pablum is more rapid than that of 6 other cereals.



BESIDES being thoroughly cooked and readily digestible, Pablum supplies essential vitamins and minerals, especially vitamins A, B, E, and G, and calcium, phosphorus, iron, and copper. It is a palatable cereal consisting of wheatmeal, oatmeal, cornmeal, wheat embryo, alfalfa leaf, beef bone, brewers' yeast, and salt.

Reprint of Ross and Burrill paper sent on request of physicians.

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APPROVED CLINICAL PATHOLOGISTS

American Medical Association Essentials for An Approved Clinical Pathologist

An approved clinical pathologist should be a licensed graduate of medicine. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry, and other allied subjects for at least three years, and he should be reasonably familiar with the manifestations of disease in the body. The director of a clinical laboratory shall be on full time or have definite hours of attendance, devoting the major part of his time to this specialty. A clinical laboratory is an institution organized for the practical application of the fundamental sciences by the use of specialized apparatus, equipment and methods, for the purpose of ascertaining the presence, nature, source, and progress of disease in the human body.

The following Clinical Pathologists directing private laboratories in California are approved by the Council on Medical Education and Hospitals of the American Medical Association:

Clinical Laboratory of Drs. W. V. Brem, A. H. Zeiler, Roy W. Hammack and G. D. Maner, 657 So. Westlake Avenue, Los Angeles, California.

Zera E. Bolin, M.D., 490 Post Street, San Francisco, California.

These laboratories use standard methods and are fully equipped to make all clinical examinations of recognized value in: **Tissue Pathology, Bacteriology, Hematology, Serology, Bio-Chemistry, Kolmer Wassermanns, Kahn test, Medico-legal, Basal metabolism, Blood chemistry, Hormone Test for Pregnancy, Parasitology, Cardiology, Autogenous vaccines, etc.**

Malling containers sent on request. Special delivery postage insures prompt, accurate service.

BOARD OF MEDICAL EXAMINERS

(Continued from Page 19)

made by him *were not true*. He stated that the only evidence before the Board that the booklet came into the hands of other parties was that of Schmidt, the owner of the laboratory, who testified that he saw a copy of a booklet prior to 1929, and the evidence of William A. Byrne, special agent of the Board, to the effect that in May, 1928, he secured a copy of the pamphlet. Judge Wilson held that *this did not constitute advertising,* which means bringing to public notice, and because of lack of proof of distribution he annulled the judgments of the Board, placing Doctor Wheeler on probation for a period of five years. L. E. Dadnum represented Doctor Wheeler in the proceedings, while Paul D. McCormick, Deputy Attorney General, appeared for the Board." (Los Angeles *Journal,* June 14, 1934.) The Board will appeal.

According to recent reports, a fraud order (No. 5364) was on May 2, 1934, issued by the United States Post Office Department, Washington, D. C. (Case No. 28851-E), against Clayton E. Wheeler, M. D., et al., at San Francisco and Los Angeles.

"Diet faddists are an ancient type of racketeers, according to Agnes Fay Morgan, professor of Household Science at the University of California. 'Diet and health "specialists," who speak with no more authority than the man in the street, are talking every day. Reducing quacks defraud and do actual harm to the public. Pseudo-dietitians are more to be condemned than the hold-up man. At least he doesn't pretend it's good for you.'" (San Francisco *Call-Bulletin,* June 18, 1934.)

"Attorney-General U. S. Webb granted the State Board of Dental Examiners authority today to sue the Commonwealth Health Service, the Life Extension Bureau of San Francisco and Oakland, and the Western Health and Hospital Corporation of San Diego. The dental board seeks to drive these corporations out of business on the grounds that they are violating the State law against corporations practicing medicine or dentistry." (San Francisco *News,* June 28, 1934.)

"Narcotic charges pending for two years against Dr. John Morris Carter of San Francisco were dismissed in federal court today on consent of the United States Attorney-General's office after Doctor Carter had made a compromise settlement with the Government by paying $500 for his asserted illegal writing of prescriptions for drugs." (San Francisco *News,* June 29, 1934.)

"Dr. Robert V. Baker, forty, of Avalon, Catalina Island, was arrested today by Federal and State narcotic agents on charges of writing assertedly fictitious prescriptions for narcotics. He was arraigned before United States Commissioner David B. Head, who fixed bail at $1,000 and set June 27 for a hearing." (Los Angeles *Herald-Express,* June 20, 1934.)

Eyesight swindlers, using the names of Nelson J. Howard and "Dr. Miles," recently buncoed Mr. J. O. Miller of 2317 Orange Avenue, Long Beach, out of $500 with the old alleged radium water eye drop swindle, mentioned in previous annual reports of the Board of Medical Examiners. When shown the pamphlet compiled by Secretary Pinkham of the Board of Medical Examiners, Miller instantly and positively

(Continued on Next Page)

When Steers Had Long Horns

THE medicinal value of the glands of internal secretion was not recognized.

But times have changed, as well as cattle. Now, the therapeutic value of certain gland products is definitely established and each year adds to our knowledge in this important field of therapeutics.

To the physician prescribing gland products we urge specification of "Wilson," because it connotes a product made at the source of supply from fresh glands, processed promptly, with the aim of conserving maximum hormone activity, in a laboratory devoted exclusively to the endocrine field.

"This mark THE WILSON LABORATORIES your guarantee"

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PHYSICIAN'S BAG

The Most Ideal and Practical Made Designed and Perfected by a Physician

At a Most Attractive Price

Style No. P-47

Standard Best Size
16 inches long

Sewed in Frame Solid Brass Nickel Plated hardware. Outside color: Rich Black. Finest sewed on leather handle. Adjustable lock.

A BAG THAT WILL MEET THE MOST EXACTING REQUIREMENTS OF ANY DOCTOR.

Finest Cowhide Leather, Elk Chrome Tanned, Rich Black Color, Leather Lined, Water Proof Artificial Leather in all compartments in bottom.
Close up interior view of inside compartments in bottom of bag.

1—End: Flashlight Compartment.
1—Top Centre: Blood Pressure Instrument.
2—Two bottles, for Mercurochrome and Alcohol.
3—Tongue Depressers.
4, 5, 6—For Miscellaneous Items.
7—Thermometer.
Large centre compartment, with zipper cover, for Adhesive, Bandage, etc. Depth, all compartments 3½ in.

$12.75 with initials or full name when check accompanies order.

PACIFIC TRAVELING GOODS CO.
583 Howard Street San Francisco, Calif.

BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

identified the picture of Frank W. Faircloth as "Dr. Howard," who obtained the $300. He states that the picture of Roy Martin resembles "Dr. Miles." He looked at the picture of Fred Asner quite a while, and stated that he looked a little like the Mr. Howard who called with "Dr. Miles." He also stated that this man was lame, as is Asner.

"Pleading guilty to two counts of violating the State Medical Practice Act, J. E. Renfer yesterday was fined $100 in the San Bernardino Township court, but Justice G. W. Holbrook suspended the penalty. . . ." (San Bernardino *Telegram*, June 27, 1934.)

The records show that on July 17, 1934, Ray Alma Richardson, D. O., a traveling food and health lecturer, was found guilty in the Police Court of San Francisco of violation of the Medical Practice Act and sentenced to serve ten days in the county jail, sentence being suspended on condition that he no further violate the terms of the Medical Practice Act and that he should not use the prefix "Dr." while in the State of California.

Investigation reports indicate that E. M. Hahn on July 10, 1934, in the Municipal Court of Long Beach, pleaded guilty to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of $300 and serve 150 days in the county jail. Twenty-five days of the jail sentence and $250 of the fine were suspended on condition that the other $50 be paid. The other 125 days of the jail sentence were suspended one year on condition that he no further violate the Medical Practice Act.

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BISMARCK O. SELBACH
PRESIDENT

FRANK SCHMIDT
BUSINESS MANAGER

Cattle Tuberculosis.—The expansion of bovine tuberculosis eradication work by the Federal Bureau of Animal Industry, as a part of the emergency animal disease eradication program under provisions of the Jones-Connally Act, will be governed by new regulations just approved by the Secretary of Agriculture. The first allotments of these funds, a total of $2,000,000, are for cattle tuberculosis work alone and will be spread over twenty-five states, as previously announced.

Following are the principal provisions of the new order:

Cattle affected with tuberculosis are to be appraised by a representative of the Bureau, and a coöperating representative of the state, territory, county, or municipality. If the owner refuses to accept such appraised value, the animals shall be appraised by three disinterested parties, one of whom shall be selected by the Bureau's representative, one by the cattle owner, and the third by the two parties.

All tuberculous cattle shall be destroyed within thirty days of the date of appraisal, except for meritorious cases in which the time limit may be extended.

The department will not allow claims arising out of the condemnation of cattle for tuberculosis on a tuberculin test applied by anyone other than a Bureau veterinary inspector, a coöperating employee of the state, territory, county, or municipality, or by an officially accredited veterinarian.

No compensation will be paid to any owner of tuberculous cattle whose entire herd is not under Federal and State supervision.

No compensation will be paid to any owner of cattle destroyed on account of tuberculosis until all infected premises have been properly cleaned and disinfected in accordance with recommendations of the proper State and Bureau officials.

(Continued on Next Page)

"... and $500 worth of vitality, please"

How simple it would be if a patient could walk into a doctor's office and order "$500.00 worth of vitality, please."

But no one knows better than the doctor that not even the most expensive pills or priceless solutions can instantly rebuild shattered nerves—can quickly restore spent vitality. The rebuilding process is generally slow and gradual.

Not the least important in the rebuilding process is good wholesome food . . . Therefore, when vitality is at low ebb and appetite lacking—delicious Cocomalt is exceptionally valuable as an adjunct to the diet.

Cocomalt increases the caloric value of the milk, with which it is mixed, 70%

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(Continued from Preceding Page)

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Further information may be obtained from state or county veterinary officials or from the Bureau of Animal Industry, United States Department of Agriculture, Washington, D. C.

Eye Injuries.—At least one thousand children suffer accidental eye injuries in the United States each year and about seventy-five of these cases result in total blindness, declared Lewis H. Carris, managing director of the National Society for the Prevention of Blindness, in a statement issued here pleading for a "safe and sane" celebration of the Fourth of July.

"As an important measure toward the protection of children's eyesight, the National Society for the Prevention of Blindness advocates complete prohibition of the manufacture and sale of dangerous toys, such as firecrackers, torpedoes, air rifles, cap pistols, slingshots, bows and arrows, darts, toy guns, and other devices for projecting missiles.

"Instead of carelessly permitting little boys and girls to play with dynamite, fire, and bullets—resulting in deaths, blindness, and a great variety of minor injuries—communities should provide spectacular displays of fireworks under expert supervision, to celebrate the anniversary of our independence. Lives, limbs, and eyes are saved when cities forbid the sale of fireworks to individuals and substitute, in each neighborhood, pyrotechnic exhibitions under the direction of competent men."

A recent study made by Miss C. Edith Kerby, statistician of the society, disclosed that more eye accidents occur on or about July 4 than occur during one hundred days at any other time in the year.

Home Treatment of Eyes.—Some popular fallacies about home treatment of the eyes are described by Dr. William L. Benedict in the winter issue of *The*

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Sight-Saving Review, quarterly journal of the National Society for the Prevention of Blindness. Doctor Benedict, who is head of the Section on Ophthalmology of the Mayo Clinic at Rochester, Minnesota, says:

"There is very little understanding on the part of the public as a whole that a most potent antiseptic agent is supplied to the eye by natural means: that is, by the tears. Laboratory experiments have shown that for most disease-producing organisms, normal tears are hundreds of times more effective in protecting the eye than solutions of drugs in such strength as can be borne. The tears are supplied in amounts that are properly regulated, and counteract the effect of most air-borne bacteria.

"Because the general public has learned that many eye lotions are put up in a solution of boric acid, the better informed immediately turn to this solution as the one safe substance that can be used for any disorder of the eye. Hence, we find that many people are using an eye cup, giving the eye a daily bath in boric acid solution, in the hope that their disorders will soon pass away and the necessity for visiting a physician may be obviated.

"The healing properties of boric acid are infinitesimal. It is used chiefly by physicians as a vehicle to carry small dilutions of more potent drugs; and because it retards the growth of fungi or of contaminating bacteria, it forms a convenient way to dispense medicines for the eye. There is not sufficient reason for the regular use of eye baths, as there may be for cleansing the teeth or gargling the throat. The practice of giving eye baths with any solution when eyelids are not diseased, except on the advice of an oculist, should be discouraged.

"There are very few remedies for the eyes that are specific; that is, remedies which are designed to counteract particular diseases or disorders of the eye. There is not one bit of scientific proof that there is any drug or other agent by which the development of cataract can be generally retarded, or by which cataracts can be removed without operation. A great deal of experimental work is being carried out in laboratories and clinics, by members of the medical profession, with the hope that some means will be found to obviate the necessity of operating for cataracts.

"I think it is well known and appreciated by people at large that there are no miraculous cures for any diseases or disorders of the eye. The faith that our grandmothers had in the use of goat's milk, sauerkraut juice, snake oil, milk and honey, or tobacco juice, has been largely dissipated by an intelligent public. The price the public has had to pay for its experience has been the loss of sight for thousands of people through misinformation, through misdirection, through misplaced confidence, and through ignorance.

(Continued on Next Page)

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(Continued from Preceding Page)

"People at large now know the value of cleanliness and the necessity of seeking medical advice when the symptoms of disease appear. They have learned that it is not advisable to attempt to remove foreign bodies from the eye in workshops where the instruments used may be so contaminated as to result in disease of the eye more serious than would be caused by the original injury. They have learned the value of prophylactic treatment of the eyes of the new-born, which has reduced the incidence of babies' sore eyes and consequent blindness to a great extent.

"When we consider the great variety of hazards to which our eyes are exposed in the ordinary pursuits of life, the wonder is that many more people are not deprived of the faculty of vision. Serious injuries are relatively infrequent as compared to injuries of other parts of the body. This is partly because the eyes are well protected by being situated in a bony orbit, and partly because they lie behind the eyelids, which can be quickly closed.

"The incidence of diseases of the eyes caused by infection has been greatly reduced by measures of personal hygiene which people in general have adopted, and because they have come to understand that diseases such as granulated lids and other acute inflammations can be spread by personal contact. There has been an effective campaign also against industrial injuries to the eyes. Blindness has been materially reduced as a result of campaigns carried out by members of the medical profession and by organization of laity. There is yet great work to be done in educating the public in the care of eyes that have been injured, in the treatment of minor ailments or diseases of the eyes, and in the treatment of diseases of the eyes in their early stages.

"Members of the medical profession stand always ready to give to the public the results of experience gained through years of clinical practice and laboratory experiments. They have only a desire to help and cannot countenance misdirection or misinformation for pecuniary gain."

Medical Resources and Mortality Trends.—Trends in mortality are of vital interest to life insurance companies, and Dr. William Muhlberg, medical director of one of the large life insurance companies, delivered an address under the above caption before the Association of Life Insurance Presidents held in New York City December 7 and 8, 1933. Through the coöperation of fifty-one leading life insurance companies, Doctor Muhlberg presented a survey of current health trends among life policyholders of the nation. In spite of the fact that the general death rate increased 2.1 per cent among policyholders in 1932, that year showed the lowest death rate on record among the general population. Relative to the outlook in mortality trends, Doctor Muhlberg said:

"It is significant that we have experienced, during the depression period, four consecutively healthy years. Prior to this period, every year of low mortality was followed by comparatively heavy losses, but at last we have been able to hold fast for a period of four years. Thus, we find that during the years of economic depression we have enjoyed one happy circumstance. It is still a grave question as to what effect the hardships of these years have had on the health of our people. Recognizing the harmful effects of strain and worry and of physical hardship and, on the other hand, the advantages attendant upon the necessity for saner

(Continued on Page 28)

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Our records show that several statements and reminders have been sent you regarding the enclosed statement.

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You appreciate, we are sure, that physicians, like other citizens, must pay their bills promptly. They can only do so, however, when their own clients in turn pay them promptly for such professional services as may have been rendered.

A check to cover your account, which is now considerably overdue, will be appreciated.

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In the September, 1927, issue of California and Western Medicine, page 398, appeared an article relating to the "collection of fees." Following this publication so many orders were received by us for printing the series of gum stickers and notices, we decided to print and stock the series in large quantities.

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(Continued from Page 26)

living, the question arises as to how the effect of such factors offset each other when spread over the whole populace and over future years. When and if we are able to measure the final result, we shall certainly have a most interesting picture.

"Although we may have reason to be proud of the record made this year against the ravages of death, we must not forget that many diseases are still our deadly enemies. We must not think that the battle has been won nor even that we are on the verge of complete victory. We still have far to go. Again, as in previous years, the tables of the aggregate experience of those companies show an encouraging decline in the rate for diseases of infancy, typhoid fever, and tuberculosis, but a discouraging rise in the so-called degenerative diseases, namely, cancer, heart, kidney, apoplexy, and arteriosclerosis, to which might be added diabetes."

San Francisco Vital Statistics.—Dr. J. C. Geiger, Director of the San Francisco Department of Public Health, has issued a summary of vital statistics in San Francisco for the calendar years 1932 and 1933. Not a single case of smallpox occurred in this city during 1933, as compared with sixty-six cases in 1932. There were but seventeen typhoid fever cases reported in 1933, with one death. Six acute anterior poliomyelitis cases occurred, with three deaths. There were eighty-two diphtheria cases, with eight deaths. Next to tuberculosis, among the epidemic diseases, influenza claimed the heaviest toll; there were eighty-seven deaths from this disease last year, among 1,162 cases. Whooping-cough was more prevalent than usual; there were 1,850 cases reported, with eighteen deaths.

Among deaths from other causes, alcoholism showed a marked increase, with forty-one such deaths last year, as compared with twenty-two in 1932. Cancer increased from 1,097 deaths in 1932 to 1,175 in 1933. Slight increases occurred in deaths from cerebral

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hemorrhage, diabetes mellitus, heart disease, bronchial pneumonia, and automobile accidents. Slight reductions occurred in numbers of deaths from chronic nephritis and suicides. The general death rate in San Francisco last year was 12.05 per thousand population and the birth rate was 10.28 per thousand population. This represents slight decreases in both the death rate and the birth rate. The infant death rate remained stationary at thirty-nine per thousand live births. The maternal death rate dropped from four in 1932 to two in 1933. The estimated midyear population of San Francisco as of July 1, 1933, was 681,325.

Cheapest Commodity Used. — Cheapest and most essential of all commodities used by man is the water he drinks. It enters into and is a part of all things that constitute his daily living, and most of his bodily weight is indicative of its water content. Without water to drink, he would die of thirst, and if there were no water for the food crops to drink, he would die of starvation. Back of water is the tree; only forested lands have water supplies in large volume. A treeless land becomes desert; and—lest any point to the western prairies by way of controverting this truth—another truth is that the prairies were forested at one time in the dim past, and that they are merely on their way to the desert.

Essential as it is, it is yet plentiful enough that no man, or set of men, can "corner the market" on it; nor would any dare to try. It is the cheapest as well as the most essential commodity of life and living, as it costs only a few cents a ton; and that cost is only in processing, to make it safe, and in delivering, to make it available. Water itself is free.

Importance of pure water to the health and well-being of every individual was emphasized by Mr. George W. Fuller, a noted water purification engineer, speaking under the auspices of the American Public Health Association in a recent broadcast over the National Farm and Home Network. "Impure water," said Mr. Fuller, "in the past has taken terrific toll in deaths caused by typhoid fever, cholera, dysentery and other water-borne diseases. The fact that these scourges no longer ravage the population is due to the tremendous improvement in the quality of drinking water supplied to the cities and towns and in many of the rural districts."

Citing typhoid fever as an example, Mr. Fuller noted that the death rate from that cause has become less than one-seventh of what it was thirty-odd years ago. "This has been brought about by the systematic, coöperative efforts of a large number of individuals working for health and water departments throughout the country," he said, and added: "They include patrolmen on the watersheds to guard against pollution; engineers, chemists, and bacteriologists at the water plants where water is subjected to filtration or sterilization, or both; laboratory workers who analyze the water as it is delivered to the consumers; and state and government health authorities who maintain general supervision over local workers."

Mr. Fuller warned against the development of a false sense of security because of the marked reduction in water-borne diseases. Adequate vigilant control over public water supplies is a constant necessity. Public health provisions are adequate for controlling the quality of water. Attention must be given to every step along the line beginning at the point of origin of the water supply and ending with delivery to the consumers. Lapses in control were responsible for nearly three hundred epidemics of water-borne disease in the United States and Canada in the decade following the war.—*Ohio Health News.*

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Malnutrition Increases Among Children of Low-Income Families.—New evidence of undernourishment among school children as a result of depression conditions is presented in the current Quarterly Bulletin of the Milbank Memorial Fund, following a study of 514 children typical of a relatively poor neighborhood in New York City.

In families with a weekly income of less than $4 per person, it was found that 41 per cent of the children were suffering from malnutrition. This rate is reported to be much higher than that among families with weekly incomes of $6 or more per person and is above that ordinarily found in the general population.

The effectiveness of "home relief" is shown, according to the survey, by a larger proportion of well-nourished children in families receiving it than in poverty-stricken families without this particular form of relief.

The New York study is part of a nation-wide survey of the health of the wage-earning population conducted by the Milbank Fund and the United States Public Health Service. The examinations of children were made in accordance with specifications of the Public Health Service and were conducted by carefully selected physicians from the New York City Health Department assisted by physicians, nurses and technicians furnished by the other two agencies.

The physician's estimate of nutrition made immediately after completion of the physical examinations, was based on an appraisal of the child's general physical condition, with special emphasis on amount of subcutaneous fat present, texture of skin and hair, and quality of muscle tone.

The economic condition of the families from which the children were selected was not known to the examining staff which graded the children upon clinical evidence. Information as to family economic condition was obtained by a different set of investigators.

The results of the study are summarized below:

1. Within this group of children there is a direct association between nutrition and income. Forty per cent of children from the lowest income groups were rated "poor" or "very poor," while only 25 per cent of the children from the higher income groups were so rated.

2. A lowering of nutritional status appears to be associated with drop in family income in as short a time as a year.

3. In the lowest income group, children from families receiving aid from the home relief bureau had somewhat higher nutrition ratings than those from families receiving other types of relief or having comparable incomes from sources other than relief. This is of especial interest in view of the fact that, although the per capita weekly income of families receiving home relief was lower than that in either of the other categories, the cash income given had to be spent for food.

4. The proportion of children suffering from malnutrition in the group examined appears to be considerably larger than the proportion of malnourished children we should expect to find in a nondepression era. While we have no records for other groups of children which are directly comparable with our data, the difference in the prevalence of malnutrition among children of low income families as compared with that among children from the highest income families, in which there has been relatively little change in income since 1929 is definitely shown for the group included in this study.—*Health News.*

Rural Sanitation.—Private homes, school property, fair grounds, dairies, mine properties, county institutions and rural communities without sewage facilities will benefit by the rural sanitation campaign that is being worked out by H. G. Southard, M. D., Director

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of Health, and the United States Public Health Service. Doctor Southard has named two of his personnel, Dr. R. W. De Crow, Director of Rural Sanitation, and Dr. W. P. Johnson, State Field Agent, to supervise this project in twenty-six counties of Ohio, while Mr. Kenneth Lynn, Assistant Director of Rural Sanitation, represents the United States Public Health Service.

Thus far work has been started in the southeastern part of Ohio, the section being divided into four districts with a district supervisor in charge of the work in each district and a local supervisor handling the work in each county.

In outlining the plans for this project, Doctor Southard said: "The county-wide plans are being organized on the basis of population, with particular reference to that part of the population and to the properties that are without sewage facilities.

"The aim of the department is to improve the milk and water supplies by the installation of sanitary privies for all properties—public or private—that are now without them. The work will give employment to men on the unemployed lists who will be paid out of the money appropriated from federal funds. Lumber and other materials must be provided for sanitary projects by the owner or occupant of the property.

Since a great many of the schools in these counties are without sanitary privy facilities, a special effort is being made to have such conditions improved. The county superintendents of schools have been notified that school sanitation projects should be included in the local Civil Works Administration program and that they are eligible for both labor and material.

In order that they may benefit by the aid offered in this way, persons who are interested in improving the sanitary conditions in or near their homes, are advised to write to or to get in touch with the County Health Commissioner or the District or County Supervisor of Community Sanitation.—*Ohio Health News.*

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VOL. 41 AUGUST, 1934 No. 2

NEPHROTOMY*

ITS INDICATIONS, LIMITATIONS, AND TERMINAL RESULTS

By ELMER HESS, M. D.
Erie, Pennsylvania

WHEN a surgeon incises through the renal parenchyma, whether or not such incision extends to the renal pelvis, he has performed, according to all the definitions that I can find, a nephrotomy.

It would be extremely difficult to give you much of a dissertation on the subject assigned me unless you permit me to stretch the meaning of the term to include the procedure which we know as heminephrectomy and the severance of the isthmus in horseshoe kidneys. A discussion of these procedures would be incomplete again, unless you also allow me to discuss nephrostomy. I realize that, when strictly speaking of nephrostomy it is not a nephrotomy and merely implies the creation of a fistulous tract from the pelvis of the kidney, by way of the renal parenchyma, to the skin wound. Many nephrotomies, therefore, also become nephrostomies.

HISTORY OF THE OPERATION

Lowsley and Bishop,[1] in a recent monograph, discuss the history of nephrotomy and the technique of various men for the control of hemorrhage from the nephrotomized kidney. They then describe a very ingenious technique of their own, with their experimental results showing experimentally, in animals, that the nephrotomized kidney by their method of closure is probably less damaged than by any other technique. They also discuss five clinical cases which really are in the experimental class. Their method of tying the kidney together with wide ribbons of catgut, after having placed some fat in the renal incision, is cleverly worked out, and seems to me to spare the renal parenchyma any extra damage that might result from the placing of through and through sutures in the kidney substance. These clinical experiments were done in four cases for large calculi, and in one for hydronephrosis. It is interesting to note that they speak of the procedure clinically, with practically the synonymous use of the terms "nephrotomy" and "nephrostomy."

It is rather difficult for me to see how a nephrotomy could be done in any modern clinic without a nephrostomy, excepting in those cases where heminephrectomy is to be done; drainage in all urinary operations being almost paramount to success.

NEPHROSTOMY

Cabot and Holland[2] have recently written an article entitled "Nephrostomy." The operation which they perform is very similar to the one performed by von Lichtenberg and Papin, and can hardly be classified strictly as a nephrotomy, because none of these operators actually incise the kidney, but rather incise the pelvis and then plunge a blunt instrument through the parenchyma. By means of this small opening they insert a catheter through the parenchyma into the renal pelvis. This is done, of course, for the purpose of drainage. Von Lichtenberg, in particular, drains a great many infected kidneys by this technique, together with whatever other procedures are indicated. It was my impression that many of the cases which I saw him operate upon while visiting his clinic would have been treated by the American urologist cystoscopically and with catheter drainage. Nor do I think that the average infected kidney, or kidney pelvis, needs such drainage except in some rare instances.

Cabot and Holland[2] give the indications for the operation as follows:

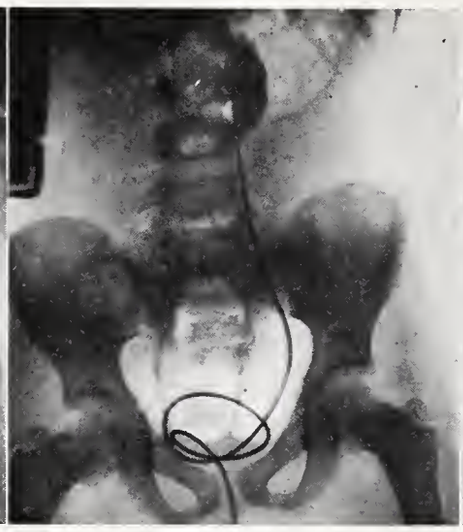
"1. Acute obstruction of both ureters, or of remaining one as in calculous anuria or malignant disease constricting the lower end of the ureter.

"2. Hydronephrosis or infected hydronephrosis in which the cause of the obstruction may be removable, but in which drainage of the kidney, as a temporary measure, is indicated to improve function. In this group of cases there may develop some in which nephrostomy may have to be permanent.

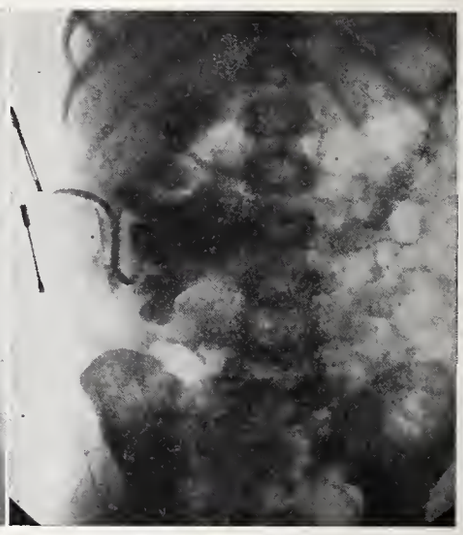
"3. Renal calculi. There are here at least two distinct groups for which nephrostomy, temporary or permanent, may be desirable. In one group are cases in which there is considerable destruc-

*Guest-speaker paper. Read before the Urology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

(H. F.—Case 3)
Fig. 1a



(H. F.—Case 3)
Fig. 1b



(H. F.—Case 3)
Fig. 1c

Fig. 1a.—Shows large hydronephrosis right kidney, absence kidney shadow on left.
Fig. 1b.—Shows attempt to make retrograde pyelogram on left side. Dye forced into upper end of ureter, no kidney present.
Fig. 1c.—Shows neo-iopax study on patient after operation to relieve stricture of the ureter at uretero-pelvic junction and nephrostomy tube in place. Kidney function much improved.

tion from high-grade blocking of the outlet, but in which the removal of stone will substantially relieve the difficulty. For some of these cases at least temporary nephrostomy may be desirable for the purpose of permitting readjustment between the pelvis and the ureter, to allow rapid recovery of renal function, and, at least possibly, to aid in the quieting of renal infection. Another group includes cases of bilateral stone formation of the type which is not now regarded as satisfactory for treatment by removal of the stones. There is a considerable number of these in which massive stone formation occurs on both sides with relatively few symptoms, but after a time leads to progressive failure of renal function which will prove fatal if it cannot be relieved. It will be remembered that Watson, in 1910, suggested nephrostomy for relief of some of these patients, and that on at least one patient he performed bilateral

(H. F.—Case 3)

Fig. 1d.—Shows neo-iopax series six months after operation. Satisfactory function. No kidney left side. Nonleakable pelvis.

nephrostomy, which maintained satisfactory renal function for more than ten years. In this connection, we would suggest that there appears to us to be some possibility that nephrostomy, maintained for a considerable period, may have a very definite influence on the formation of stone, although we do not think that the evidence on this point will as yet warrant any conclusion. A recent publication by Boyd calls attention to this point, and at least in one of Watson's cases stones appeared to develop with much less rapidity after nephrostomy. We think, therefore, that in this group it may appear that there is more than one ground on which nephrostomy, permanent or semipermanent, may be advised.

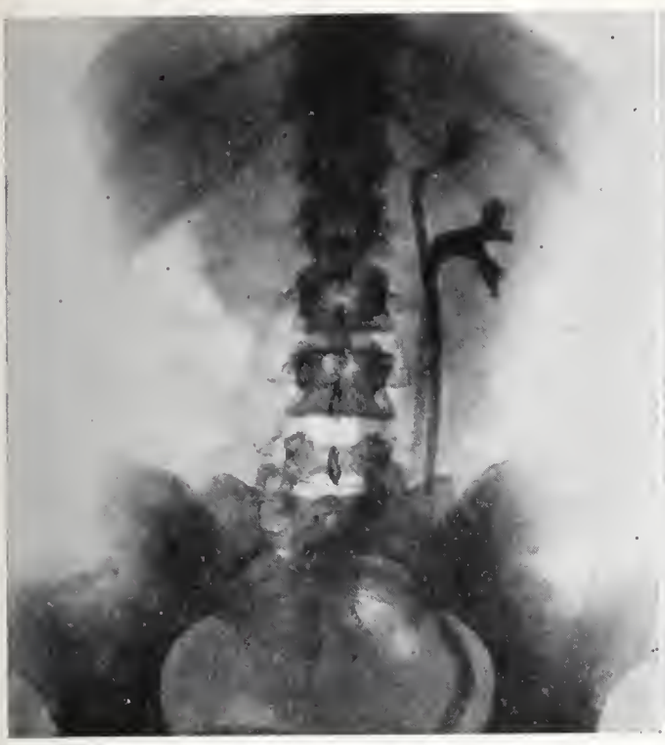
"4. Nephrostomy must, perhaps at least for the present, be retained as an occasional method of diverting the urinary stream in carcinoma of the bladder thought suitable for total cystectomy.

"5. We would here include that obscure group of cases in which the failure of the muscular apparatus of pelvis, ureters, and bladder satisfactorily to evacuate the urine leads to progressive atrophy of the kidneys. This group will doubtless become increasingly amenable to treatment by other methods; but we are at present faced with a certain number of these patients in whom renal insufficiency threatens, relief cannot be assured by other methods, and nephrostomy may be relied upon to check further damage and perhaps allow for some measure of regeneration.

"6. We would here include a group of cases of renal infection without high-grade obstruction in which the nephrostomy is done as a method of avoiding recurrent renal infection and allowing some amount of renal recovery."

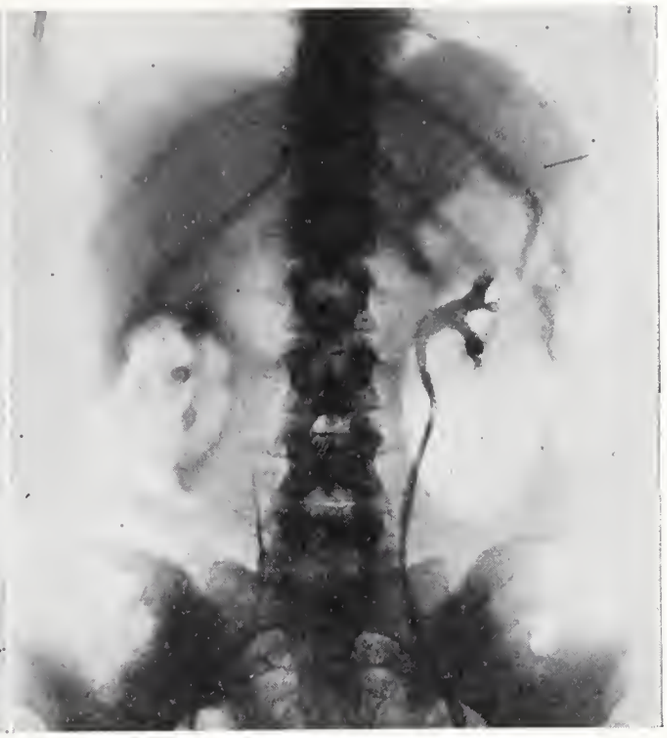
Their cases include those of nephrolithiasis, hydronephrosis, lesions of the nerves, obstruction of the lower ureter, renal infections, and carcinoma of the bladder.

I can subscribe to the value in certain types of cases of this type of operation. I have done a



(E. H.—Case 5)

Fig. 2a.—Shows double ureter and pelvis of left kidney. Marked infection upper pelvis.



(E. H.—Case 5)

Fig. 2b.—Pyelogram taken after heminephrectomy.

nephrostomy in several cases of hydronephrosis and nephrolithiasis, and three typical cases will be reported.

REPORT OF CASES

Case 1.—J. C. M., male, age forty-eight years, was ill for two weeks with chills and fever and had very little pain. Unable to account for the fever and finding much pus in the urine on several occasions, his physician referred the patient for urological examination. A rough stone was found about 6 centimeters below the right renal pelvis, completely blocking the ureter. At operation this stone was removed. There was a large perinephritic and peri-ureteric collection of pus. The ureter was badly distended with pus and urine, and the kidney was swollen and tense. Believing that the kidney might be saved, I did a pyelotomy, thrust a blunt hemostat through the lower pole of the kidney and hooked a No. 22 catheter into the renal pelvis. No attempt was made to close the wound in the ureter. Rubber tissue drains were placed down both sides of the kidney to the incision in the ureter. The convalescence was stormy, but after three weeks the temperature, pulse, and respirations became normal. The catheter was removed as soon as it loosened, and a pyelogram made showed a leak in the cut ureter and one in the renal pelvis. Ten days later the wound had healed and the pyelogram showed a tight pelvis. The function of this kidney has returned to normal and the urine has cleared, and only an occasional pus cell is found. The patient is fully recovered with a good kidney fairly free from infection.

* * *

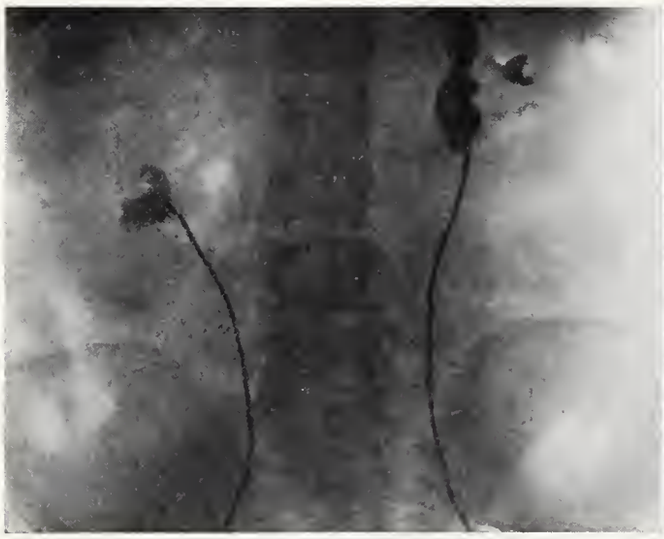
Case 2.—F. G., male, age twenty-six years, was admitted to St. Vincent's Hospital with a diagnosis of acute appendicitis. The attending surgeon, however, felt that a urological examination was indicated. This revealed a stricture of the uretero-pelvic junction with a large right hydronephrosis. The function of this kidney was badly impaired. A plastic operation with transplantation of the ureter was performed. A hemostat was forced out through the lower third of the kidney and a No. 22 catheter was fixed in the pelvis of the kidney, and brought out through the loin incision. Rubber tissue drains were placed down both sides of the kidney toward the pelvis. The catheter was removed on the tenth day, postoperative. Six weeks later the pyelogram showed marked improvement in the hydronephrosis and the renal function. The patient was completely relieved of his symptoms.

* * *

Case 3.—H. F., female, age five years, was admitted to Hamot Hospital with constant pain in the upper right abdomen, aggravated by walking. Cystoscopic examination showed that this child had a congenital

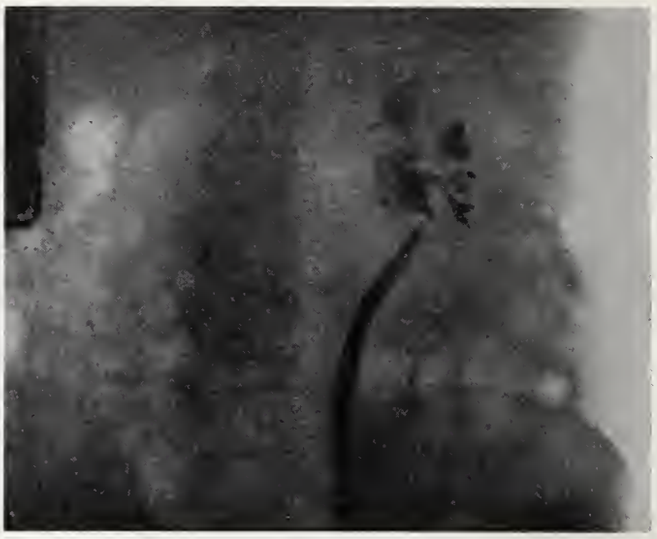
(L. D.—Case 6)

Fig. 3a.—Shows large hydronephrotic right kidney with a large stone in the pelvis and another large stone in the lower pole. No function from this kidney. Left pyelogram is essentially normal with the exception of the lower pole of the kidney where there appears to be a large calculus.



(L. D.—Case 6)

Fig. 3b.—Taken several weeks after the first operation, showing a fairly normal pelvis in the heminephrectomized kidney with the large stone still in the right side.



(L. D.—Case 6)

Fig. 3c.—Shows a pyelogram taken following the removal of the huge calculus hydronephrotic kidney and the heminephrectomized kidney at the time of dismissal from the hospital.

absence of the left kidney and a huge right, infected hydronephrosis due to stricture of the ureter at the ureteropelvic junction. Two weeks after admission, a plastic operation was performed on the renal pelvis, and a catheter was inserted through the parenchyma of the kidney for the purpose of drainage. The anastomosis between the pelvis of the kidney and ureter failed to heal properly and a ureteral flap extended into the cavity of the renal pelvis, acting as a ball-valve obstruction to the ureter. A subsequent operation was necessary to correct this and drainage was instituted after the second operation by a ureteral catheter into the pelvis of the kidney, and by another catheter through the old nephrostomy wound to the loin. The nephrostomy catheter was removed ten days later, as was the ureteral catheter. The nephrostomy wound healed promptly and the child made a splendid recovery. The nephrotic kidney has improved considerably, the infection has practically cleared, the dye test normal, and although still badly nephrosed, the single kidney is working satisfactorily. (See illustrations.)

Heminephrectomy and division of the isthmus of a horseshoe kidney become, at times, likewise necessary surgical procedures. All told, there are in my own series twelve cases where these procedures have been considered necessary.

I think that the operation is indicated in horseshoe kidney at times where calculus disease, pyonephrosis, or tumor exists in one-half of the kidney. Occasionally it is necessary to sever the lower pole of such a kidney, leaving both halves *in situ*, in an endeavor to relieve pain and kinking in the ureter, as described by Donohue.[3]

REPORT OF CASES

Case 4.—A. P., male, age twenty-five years, had a stone in the upper calyx of the left kidney. At operation it seemed more feasible to do a partial nephrectomy, removing the calyx and parenchyma of the kidney of the upper pole. This partial nephrectomy was accomplished without much injury to the kidney, and with complete relief of the symptoms. No attempt was made to drain the kidney through the renal parenchyma.

* * *

Case 5.—E. H., female, age thirty-three years, left double kidney and double ureter. Upper pole of the kidney and ureter badly infected, lower pole essentially normal and uninfected. Heminephrectomy accomplished with little difficulty. No attempt at drainage through the renal parenchyma. The result was good. (See illustrations.)

* * *

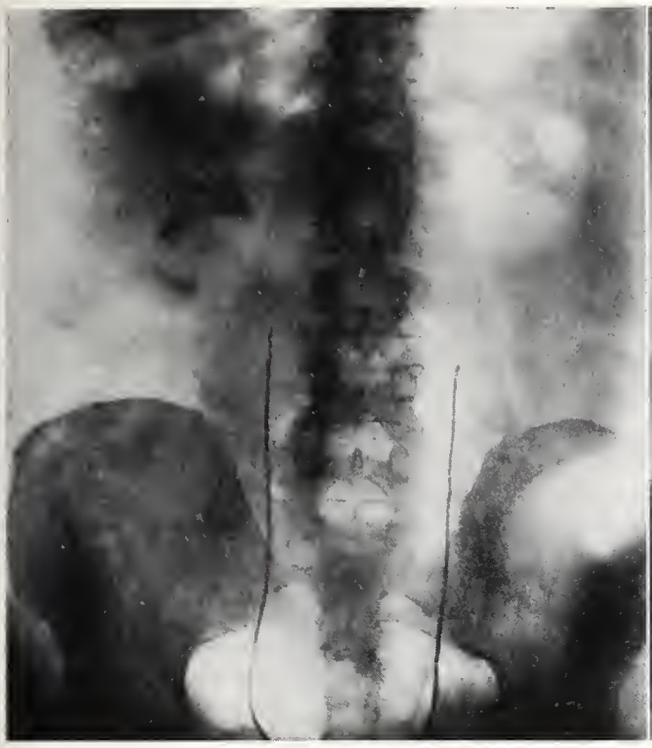
Case 6.—L. D., female, age fifty-eight years, had bilateral renal stones. There were two large stones in the right kidney. There was no function from this kidney. In the lower pole of the left kidney, which was the only functioning organ, there was a large stone. Operation on the left kidney was done first, and the large stone was found to be in an abscess, involving the parenchyma of the lower pole. Heminephrectomy, with the removal of the abscessed cavity and stone, was performed. No attempt was made to drain the kidney through the parenchyma. The wound healed satisfactorily and the kidney continued to function normally. Several weeks after the first operation the right kidney, which was a huge hydronephrotic sac completely obstructed by a stone at the pelvic-ureteric junction, was removed. Satisfactory recovery was made by the patient and the symptoms were completely relieved. (See illustrations.)

* * *

Case 7.—F. M., male, age fifty-six years. Diagnosis: hypernephroma in right half of horseshoe kidney removed by heminephrectomy. Unfortunately, a year or so later, the patient died of a metastasis to the ilium. This case was reported by myself in the *Journal of Urology,* January, 1932.

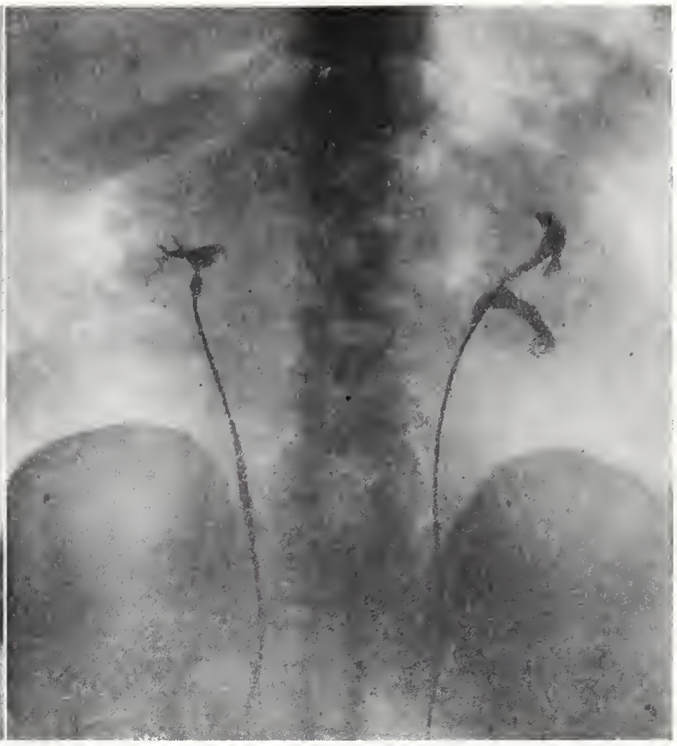
NEPHROTOMY

This brings me, therefore, to a discussion limited entirely to the subject of this paper, nephrotomy. I can understand the necessity for the occasional performance of a straight nephrotomy, but I can think of more reasons why a nephrotomy should not be done. I am rather a firm believer in the hypothesis of Hinman,[4] that if a kidney becomes sufficiently injured, and its routine work is sufficiently interfered with over a given period of time, that its normal, healthy fellow will take all the added duties by compensatory hypertrophy, and that it will, with reluctance, relinquish these



(W. P.—Case 11)

Fig. 4a.—Shows large staghorn calculus right kidney. Operation consisted of nephrotomy with removal.



(W. P.—Case 11)

Fig. 4b.—Shows complete atrophy of right kidney following removal of large staghorn calculi through nephrotomy wound. Compensatory hypertrophy left kidney.

duties. I have seen plenty of clinical evidence of this phenomena, and approach a badly damaged kidney from any cause without conservative ideas, provided its fellow is in good condition.

I think that we sometimes make a mistake in certain types of renal disease in attempting to be too conservative. In these cases, as I have outlined, very often the radical nephrectomy is far better than the conservative attack upon the diseased kidney. However, where the patient has only one kidney, emergencies then arise that will require the most conservative approach. Is nephrotomy a good operation in some of these cases? Certainly, now nephrectomy cannot at all be considered. Again, I would say that a very careful preliminary study of such a case might prevent a nephrotomy from being done.

Let us for a moment take the most common indication for nephrotomy: a large stag-horn calculus in a badly damaged single kidney. I believe that, in the vast majority of these cases, the calculous material can very often be removed, regardless of its size or of the number of its fragments, through a pyelotomy wound. A nephrostomy, such as described earlier in this paper, may be good technique, but I have removed large stag-horn calculi from the kidney by pyelotomy, that ordinarily would have been removed by a nephrotomy incision, in which, during the operation, the pelvis of the kidney had been so badly damaged that it seemed as if a nephrectomy would absolutely have to be done, or as if the patient would die from the manipulation; and yet I have seen a perfectly satisfactory pelvis regenerate and be present after healing had taken place. The pelvis of a kidney may be almost completely torn off from the hilus, and yet satisfactory healing will take place, as evidenced by reports of Joly.[5]

REPORT OF CASE

For example:

Case 8.—R. S., a male, age forty years, had bilateral nephrolithiasis. The left kidney was a normally functioning organ with a large calculus in a small pelvis bound down with perirenal inflammatory adhesions. The right kidney was a pyonephrotic calculus sac. At the first operation, the calculus was removed from the left kidney, using a U-shaped pyelotomy incision. In removing the stone, the pelvis was literally torn to shreds. It was impossible to repair the pelvis. A catheter was placed through the renal parenchyma into the space where the pelvis had been and a ureteral catheter was introduced through this same opening and down into the ureter. Knowing that the kidney on the opposite side was completely dead, the case was watched with a great deal of interest and with much misgiving. The ureteral catheter was removed in four days, the larger catheter into the pelvis was removed in ten days. The loin fistula closed almost immediately and several weeks later the pyelogram showed a perfectly satisfactory non-leaking renal pelvis. The function of the kidney was normal, and I was able to remove the calculous pyonephrotic kidney at a subsequent operation. This patient is living and well two years after without calculus recurrence.

As a matter of fact, to do a nephrotomy one must consider an already damaged kidney, to which further insult is going to be added as a result of cutting through the parenchyma and the severance of end-arteries. Parts of the renal parenchyma supplied by these end-arteries are going to atrophy. If through and through sutures are then placed through the parenchyma, regardless of where or how, they are going to cause further damage and atrophy to that parenchyma, and

Lowsley's [1] new technique is sure to be of some benefit in those cases where the operating urologist finds that he must do a nephrotomy.

Young [6] says that a nephrotomy is indicated in certain types of nephrolithiasis, hydronephrosis, and in certain other conditions where there is some pathological condition in the renal pelvis that cannot be approached by any other method. Frankly, I do not know what some of these other conditions may be unless he means a papillary carcinoma which, for example, because of necessity, must be treated *in situ* by fulguration or the implantation of radium. This, of course, would never be done where the diagnosis was made or suspected prior to operation, if there was a good kidney on the opposite side; and even then, if it were contemplated, a pelvic approach, in my opinion, would be far better.

Some writers speak of needling a kidney to locate stones that are not readily approached through the renal pelvis, and then cutting directly down on the stone with a nephrotomy incision, removing it with stone forceps. I will not condemn this procedure. I have done it in very rare instances. If the stone, however, is in a sacculated pocket in the renal parenchyma, it seems to me that a resection of the lower pole of the kidney, together with the sacculation, would be far more preferable and would not as readily lend itself to the reformation of a calculus in this dependent sacculation. I have done a nephrotomy in calculus disease on several occasions. I must confess that I believe I have only added to the destruction which has already taken place in my patient's renal parenchyma. I believe that the vast majority of the kidneys so operated upon will atrophy; and if they are single kidneys, the patient might succumb much more readily from drainage thus instituted than from other forms of treatment. Where there are two kidneys and a nephrotomy is considered necessary, it seems to me that nephrectomy, in the vast majority of cases (provided, of course, that the other kidney is good), is much to be preferred.

REPORT OF CASES

Case 9.—J. S., female, age forty years, had bilateral calculus disease in ptotic kidneys. About ten years ago she was operated upon and the stones in the left kidney were removed by pyelotomy. This kidney was drained for a long time through the nephrotomy wound. The kidney was likewise suspended to the twelfth rib. Two years ago this woman was referred to me with the following results. She had no pain in her back, but she had frequency and urgency of urination with the urine filled with pus. Cystoscopy showed that the bladder was filled with pus, good dye from the left kidney, practically no dye from the right kidney, although urine with pus was obtained from the right kidney. The x-ray and pyelogram showed recurrence of stones in both kidneys. The nephrotomized kidney was practically functionless, although the stone in the nephrotomized kidney did not seem to be as large as the stone in the unnephrotomized one. Operation was advised, to remove the stone from the good kidney first, and then to remove the other kidney. This was refused, and I have since been able to keep this woman in perfect health, free from symptoms, by weekly lavage of both kidneys. She is apparently in good health today, although she has bilateral stones, a functionless kidney on the right side and a urine that is constantly filled with pus.

* * *

Case 10.—M. D., female, age fifty-four years. This woman had a congenital atrophic left kidney and a huge calculous pyonephrotic right kidney. She was brought to me in uremia and anuric. Here was a beautiful emergency case for a nephrotomy; but instead of doing a nephrotomy, I put two large No. 5 catheters through the cystoscope into the pelvis of her kidney and started continuous lavage, with a big dose of morphin. A great deal of calculous pus was washed out of the kidney. She began to secrete urine, and several weeks later left the hospital eliminating from fourteen to sixteen ounces of pussy urine every twenty-four hours. I kept this woman alive for over six years by weekly lavage. She finally died of uremia. Many pyelograms were taken; and by comparison it was impossible to tell which was the first picture, and which was the last one. At autopsy it was impossible to believe that the kidney which was removed had been able to sustain life at all. It looked like one large calculous pyonephrotic sac, and yet that kidney had served, and served well for six years. Had I nephrotomized her and lavaged this calculous débris out through a nephrotomy wound, I doubt if I should have had as successful a result.

* * *

Case 11.—W. P., male, age fifty years. This patient has a large stag-horn calculus in the right kidney, and a perfectly normal left kidney. Urine is secreted through the right kidney and no dye after half an hour, the left kidney being perfectly normal. Undoubtedly, a compensatory hypertrophy had taken place in the left kidney, and if Hinman [4] is correct, the left kidney had taken over the entire work of the right kidney. At operation, a nephrotomy was performed, the stone removed, the kidney parenchyma did not look bad, but this kidney has atrophied; it has no dye output at the present time and a nephrectomy would have been a preferable procedure. (See illustrations.)

* * *

Case 12.—M. M., female, age forty-one years. This patient was referred to me because of a diagnosis of renal stone. She had terrific renal colic. No stone could be demonstrated by the x-ray, but some nephrosis was shown by the pyelogram. The left kidney was perfectly normal. This patient was treated by lavage without relief of pain. Attempts were made to show a calculus by the wax-tipped catheter, but this proved nothing. An exploratory operation was decided upon. No stone could be felt in the ureter or in the pelvis after the kidney was exposed. A nephrotomy was decided upon for the purpose of exploring the pelvis. This was done. No stone was found. A renal sympathectomy was then performed. The kidney was closed with mattress sutures without nephrostomy drainage. This patient was completely relieved of her renal pain. However, the pyelograms now show almost complete atrophy of this kidney and the renal pelvis. These cases illustrate what can happen to kidneys that are subjected to a carefully performed nephrotomy. They also show what can be done in some of these cases by other forms of treatment than operation.

CONCLUSIONS

Nephrostomy through a stab wound, or a punch wound, may be a very valuable procedure in certain types of acute obstructive urinary lesions and in certain types of infection. Heminephrectomy and resection of horseshoe kidneys are feasible, often necessary, and desirable surgical procedures.

Nephrotomy is an operation that may at times be absolutely necessary in large stag-horn calculus disease in a solitary kidney. It should never be used in the removal of stones from a kidney where the opposite fellow is normal, and where one has every reason to believe that so-called compensatory hypertrophy has taken place. Nephrectomy would here be the choice. There are a few calculi so large that they cannot be removed by a pyelotomy incision, which is far preferable to any approach through an already damaged renal parenchyma.

Small nephrotomies for small stones in dependent calyces may be at times a procedure of choice, but in these cases, if the parenchyma of the kidney is fairly good, the dependent portion of the kidney might be better treated by heminephrectomy with removal of the sacculation than by nephrotomy with only removal of the stone.

The dangers of nephrotomy are in the order of their frequency. First, secondary hemorrhage which might require a later nephrectomy, and which would prove fatal in a solitary kidney; infection which may be increased as a result of that already present, plus the added trauma due to the operation, and atrophy of the kidney due to severance of end-arteries, and the further damage that may be necessary as a result of through and through suturing. Where nephrotomy must be done, the technique of Lowsley,[1] in tying a nephrotomized kidney together, is recommended because it does not further add to the parenchymal damage sure to occur if through and through sutures are used.

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MODERN OBSTETRICAL STANDARDS*

By Alice Freeland Maxwell, M. D.
San Francisco

THE history of obstetrics is a fascinating survey, in that it reflects the transition of procedures dating from antiquity to modern conceptions which are limited only by the present horizon of scientific medical data. The foundation of all medicine is identified with the instinct for self-preservation; medical practice subscribes to this motive by three broad principles of attack, namely, curative medicine, or the treatment of disease; preventive medicine, which provides measures for avoiding disease, and constructive medicine, which enhances the natural resistance of the individual. Prophylactic and hygienic measures are important tributaries to the stream of medical progress, and the conception of the rôle of medicine as a preventive, rather than a curative function, serves to differentiate the modern objective from that of previous eras. This brief review attempts to illustrate the evolution of obstetrics, and its conformation and contributions to present-day preventive standards.

* From the University of California Medical School.

* Chairman's address, Obstetrics and Gynecology Section of the California Medical Association, at the sixty-third annual session, April 30 to May 3, 1934.

OBSTETRICS AMONG PRIMITIVE PEOPLES

Among primitive people at the beginning of history, disease was regarded as a punishment for evil or a visitation from occult forces. Although ignorant of contagion, the wisdom of flight from the sick was dictated by common sense. If withdrawal were not possible, incantations and mystic rites were employed to draw off or bribe the evil spirits of disease. Certain individuals of the tribe were more gifted in this endeavor and possessed mysterious powers over the spirits; thus evolved the medicine man—the interpreter of therapeutic magic. His agents, whether in the form of such tangible vehicles as blood, teeth, skins of birds or animals, terrifying shrieks, or by such intangible methods as incantations or mystic rites, were equally effective, since their rationale was based upon psychotherapy and the inherent recuperative powers of man. Because disease was attributed to supernatural forces, the association of healing and religious practices was a logical sequence. The status of obstetrics at this period is of primary interest. Observation of animal behavior demonstrated three occasions for retirement—for purposes of rest, during periods of sickness, and at the time of parturition. It was common knowledge that animals assumed appropriate and effective postures during delivery, lacerated the cord and ingested herbs to control postpartum hemorrhage. The methods of animals were imitated by humans with such modifications as were indicated by convenience and racial or tribal customs, and gradually obstetrical conventions were developed. The early woman had but little difficulty with labor, for her pelvis was adapted to the size of her child, her food was rational and physical exercise maintained effective muscular tone. Assistance was given to the woman in labor by a midwife qualified for her position by the fact that she had borne children herself and was, therefore, familiar with simple problems. In difficult cases, the aid of the medicine man was required. Egyptian civilization made significant contributions to medicine in that in Egypt the practice of medicine passed from the hands of the sorcerer into those of the priest—an intelligent, educated man. Medical papyri of the twelfth and thirteenth dynasties (1850 B. C.) contained therapeutic directions in gynecology, and dealt with problems of pregnancy and sex determination: in the Berlin Papyrus (1500 B. C.) are

found provisions aiming at the protection of mother and child. During the period of the Ptolemies, surgery was well developed, judging from illustrations of vaginal specula, retractors and surgical appliances depicted on the walls of the temples. When the Egyptian priest was called to assist at a difficult labor, he did not depend upon divine interference but rendered active aid by manipulation or instrumental removal of the child. Even podalic version was known. The Hebrews, in contrast, directed their attention toward the hygiene of pregnancy and labor, and incorporated hygienic measures in their religious codes. No material assistance was offered to the woman in difficult labor; instead, she was comforted until she died.

INFLUENCE OF THE GREEKS AND ROMANS

The Greeks early brought to bear the spirit of criticism on the superstitious views of the phenomena of life and established the principles of science upon which modern medicine is built—namely, there is no authority without facts; facts are obtained by accurate observations; deductions can be made only from facts. To the Hellenic mind a state of health, physical and mental, was requisite to the beauty and symmetry of life, and therapy was based upon rational empiricism and hygienic practices which maintained a state of physical perfection. The Greeks materially contributed to the advancement of medicine by effecting its complete separation from religion; but in the Hippocratic oath were established for all time the essential principles of moral and ethical medical conduct. During the life of Hippocrates, the midwives became a well organized group with clearly defined duties and limitations, which were regulated by physicians who were required to assist in all cases of dystocia. The Greek physician was an educated man, and as such established and maintained a position of respect in the community.

In Italy the early physicians were slaves with superficial medical knowledge and inadequate training; and, as a class, they were so lightly regarded that it was not until the time of Julius Caesar that the right of citizenship was bestowed upon them. During the third century B. C., Greek physicians began migrating to Rome, and slowly Greek influence infiltrated and dominated Italian medicine. The writings of Soranus (second century A. D.) display a wide knowledge and broad viewpoint. His manuscripts on obstetrics and gynecology include the following subjects: the qualifications of midwives, individuals of high personal endowments and good character; the limitations of their duties; a description of the structures of the reproductive organs (necessarily inaccurate because based upon animal dissection), physiology of menstruation, conception, pregnancy and labor; indications for abortions; obstetrical operations of version and embryotomy, specula for vaginal examinations, and finally a warning against meddlesome obstetrics. Soranus' attainments climaxed the school of classical Greek medicine which was already in its decline; centuries later, in the Middle Ages, these principles were revived, marking a time when medieval obstetrics was once more on a par with that of the ancients. With the fall of Rome came famine, pestilence and wars; liberal studies were at an end, and medical practices evolved through the preceding centuries were discarded.

THE DARK AGES

The early Christians were taught to recognize in every ailment a personal manifestation of the Almighty; there was no need for a physician in such a society, and Greek medicine was considered a pagan art. This, the period of the Dark Ages, was characterized by complete indifference to human life and overemphasis on the value of the soul. Rational medicine was replaced by superstition and mystical rites. The fate of the pregnant woman was particularly unfortunate, since early and medieval Christians saw childbearing the end result of a carnal sin to be expiated in pain. Urbanization and crossbreeding resulted in pelvic contractions; the spread of disease and lack of sanitation made childbearing especially hazardous. No male assistance in labor was permitted, and ignorant midwives were in complete control. In the Middle Ages, under monastic supervision, the church took over the function of regulating midwives, not with the purpose of ameliorating the condition of the pregnant woman, but to design maneuvers to prolong the life of the child and mother for sufficient time to permit intrauterine baptism, after which the bodies of the mother and child were ruthlessly sacrificed.

OBSTETRICS IN THE RENAISSANCE

During these Dark Ages, Greek medicine was perpetuated by the Arabians until reassertion of reason in the eleventh and twelfth centuries permitted the contact of this knowledge with western peoples and established the dawn of the Renaissance. The organization of medical schools at Salerno in the eleventh century, at Oxford, Bologna, Paris and Padua in the twelfth and thirteenth centuries, stimulated renewed interest in anatomical studies, and an enormous amount of traditional learning again became available. Classicism was revived but the supreme accomplishment of this era was the foundation of the basic sciences. The attainments of the school of anatomy at Padua fertilized surgical progress, since anatomical errors, passed on from the ancients, were corrected and served as a direct lead to the study of function and physiology, the logical approach to scientific observations. Obstetrics reacted to these advances. In the sixteenth century, Paré, a barber-surgeon, rediscovered version, and in the same century appeared Roesslin's book "Rose garden for pregnant women and midwives"—two events which mark the beginning of reawakened interest in the fate of the mother and child; and for the first time in centuries the childbearing woman received some consideration of the medical group. During this period, training for midwives in medical schools was instituted, which resulted in a better class of women serving as

midwives. Despite opposition to the male medical attendant, the acceptance of his services in difficult labor cases gradually spread and was eventually required by royal families. The appearance of obstetrical forceps in the seventeenth century, and the recognition of contracted pelves in the eighteenth century, were significant highlights in obstetrical progress. From now on epochal events occurred with such rapidity that in the brief panorama time permits only mention of outstanding discoveries.

HIGH CHILDBIRTH DEATH RATE IN SEVENTEENTH AND EIGHTEENTH CENTURIES

The high death rate of childbirth during the seventeenth and eighteenth centuries necessarily drew professional attention to the urgency for reform in obstetrics. Substantial contributions to this movement were made by Harvey, who described the anatomy and physiology of the fetus and urged the occasional medical supervision in childbirth. He favored conservatism, and deplored "the promptings of the officious young giddy midwives urging the poor woman in labor, on her three-legged stool, to employ the expulsive faculty before her time." Moreover, he recognized that the safety of the woman depended upon a new understanding of the mechanism of labor. Forceps were in general use in the early part of the eighteenth century, and the first organized lying-in hospital was established in England. Pelvimetry for the diagnosis of normal and abnormal pelves, and a method for treatment of placenta previa were introduced by Smellie, who not only practiced obstetrics but trained young men students, by a plan of externe service. William Hunter contributed to the knowledge of fetal circulation of the placenta and the anatomy of the gravid uterus, and by his charming bedside manners commended the employment of male obstetricians —a definite step in line with prophylaxis. The hazards of puerperal fever were materially reduced in England following White's recommendations, which emphasized need of systematized antenatal supervision. He described the signs and symptoms of puerperal sepsis, and offered suggestions for its prevention by maintaining cleanliness of the patient and her bed linen, early adoption of the sitting-up position after delivery, and adequate ventilation and light for the lying-in room. White attributed puerperal infection to a retention of lochia, and to the effects of mismanagement of the obstetrician or nurse, or to the individual's own imprudence. Though unaware of the etiology of sepsis, he offered valuable empirical measures for its prevention.

ADVANCES IN THE NINETEENTH CENTURY

The nineteenth century abounds with examples of scientific achievements: the identification of bacteria, their rôle in infections, the development of instruments of precision with consequent more accurate clinical diagnosis and immunization. The recognition of pathological anatomy, grounded upon normal and abnormal physiology, contributed materially to rational clinical medicine.

The practical application of these advances in surgery was retarded until anesthetics were discovered, the rôle of bacteria in wound infection was recognized and the principles of asepsis were formulated, all of which permitted surgery to assume a position of equal importance with that of clinical medicine. The rapid advances in the field of surgery have been an incomparable boon, not only in saving lives and curing disease, but as a preventive method of attack. The contributions of Holmes in America, and Semmelweiss in Vienna, antedated the discovery of the etiology of infection, yet both deserve their place in the hall of fame. Semmelweiss developed his method of preventing puerperal sepsis by an elaborate process of elimination; unfortunately his arguments, though sound, lacked convincing proof until Pasteur later identified bacteria and established the science of bacteriology. Semmelweiss was the pioneer in the realization of modern asepsis, and his methods of prophylaxis are a classical example of the importance of preventive measures.

THE TWENTIETH CENTURY

With the dawn of the present century, the assembled facts of many treasured traditions found fertile soil, and the correlation of many different lines of endeavor have continually advanced the frontiers of medicine. Research along physiologic-chemical lines have reaped a rich harvest, illustrated in the isolation of the body's internal secretions, and their chemical synthesis and appreciation of their function in body economy, and by the discovery of vitamins and their rôle in regulating and protecting the life of the individual.

The practical issues which have developed from data collected during the centuries are exemplified by the broad scope of modern obstetrical supervision which emphasizes the importance of prophylaxis. Human genetics and eugenics should be carefully considered in any plan of race-betterment ideals, unfortunately not yet applicable to human beings. The obstetrical viewpoint commences during the infancy and childhood of the prospective mother; since proper diets and hygienic measures obviate many pelvic deformities, and attention directed to the prevention of infectious diseases will conserve the integrity of the respiratory, circulatory and urinary systems. The educational equipment of the obstetrician implies a broad medical viewpoint, a comprehension of surgical principles and the technique of their application, and requires exact information concerning the physiology and pathology of pregnancy and parturition. The advantages of preventive measures in obstetrics are strikingly confirmed in the policy of adequate pre- and postnatal supervision. Even after centuries of progress, however, our knowledge of many vital problems is inadequate or shrouded in complete mystery. The steady march of medical progress justifies the prediction of the ultimate solution of these questions through the combined efforts of the clinician and research worker.

University of California Medical School.

CALIFORNIA STATE MEDICAL LIBRARY*

REPORT FOR THE SECOND YEAR

By C. D. Leake, Ph. D.
San Francisco

IT may be appropriate to repeat the general policy of the State Medical Library as stated in last year's report:†

The primary purpose of the State Medical Library is to provide registered physicians and surgeons of the state an opportunity to keep abreast of current medical advance, and to offer them adequate library facilities. The effort is particularly directed toward physicians practicing in outlying communities where medical library facilities are not available. This purpose can best be met by a circulating periodical service under which a doctor may receive regularly one or more periodicals in a field of medicine in which he is especially interested. Supplementing this, the physician may call upon the State Medical Library for literature relating to some particular problem concerning him at the moment. Mailing costs are met by the physician.

During the past fiscal year, 1933-1934, no attempt has been made to increase the facilities or the services of the State Medical Library because of the necessity of conserving funds.

SUSTAINING FUNDS OF THE LIBRARY

When the Library was established in June, 1932, whatever was in excess of $120,000 in the surplus funds of the State Board of Medical Examiners was set aside by legislative enactment for the Library's inauguration and maintenance. This fund amounted to about $42,000. During the fiscal year, 1932-1933, nearly $12,000 was expended in starting the State Medical Library. A report on the first year's work was published in California and Western Medicine in June, 1933 (Vol. 38, pp. 421-422). In 1933-1934, the budget of the Library was $7,500. The budget as planned for 1934-1935 is the same, but it is expected that only about $6,000 will be actually expended. By July, 1935, there will remain approximately $15,000 in the State Medical Library Fund. It is expected that this will enable the Library to function for only two and one-half to three more years from that date unless further resources become available, or unless its services are seriously crippled. During the first year's operation, approximately $6,000 was spent for necessary office equipment, reference books, and for journal subscriptions; $5,000 for salaries of librarians and office help at the two branches of the Library in San Francisco and Los Angeles; and the balance for travel expenses in connection with making personal contacts with physicians through the smaller communities in the state in order to acquaint them with the opportunity afforded by the Library. At present, journal subscriptions, purchase of books, and office expenses run about $3,500 per year, with $4,000 available for salaries of librarians and general assistance at the two library offices. It should be noted that the librarian in charge serves without salary. Reductions in this budget are possible only in curtailing personnel, which means reducing the efficiency of service, or by reducing journal subscription, which means depriving physicians of the chief help which the Library can give them.

PHYSICIANS WHO ARE SERVED BY THE LIBRARY

At present the Library is serving a total of approximately 800 physicians, scattered through 162 small communities of the state outside of the metropolitan areas of Los Angeles and San Francisco. This is about 8 per cent of the total licensed physicians and surgeons in the state. The Library is costing a little less than $10 per year per physician served. It is to be emphasized that the doctors using the Library are the very ones for whom it was created, namely, those for whom no adequate medical library facilities exist in the community in which they work, and who can only satisfactorily keep abreast of recent medical progress by receiving regularly current medical periodicals, particularly relating to their special fields. The cost of this circulating periodical service, per doctor using it, could be materially reduced by a slight increase in the number of journal subscriptions which would permit a much larger number of physicians to receive them. New requests for service cannot now be granted because of lack of sufficient funds.

In spite of the fact that no effort has been made to acquaint more physicians with the service rendered by the State Medical Library, its use has steadily increased during the past year. This is shown by the data summarized in Table 1. Part of the increase in the number of borrowers and communities served from the San Francisco office, from June of last year, is due to a special trip which Miss van Zandt made through Butte, Yolo and Sonoma counties to afford personal contacts with physicians in these regions in order to acquaint them with the facilities of the Library. It is to be emphasized again that the most effective manner to obtain regular use of the Library service is by direct personal visits. In this work Miss van Zandt, who inaugurated the library service in 1932, has been most successful.

PERIODICALS CHIEFLY IN DEMAND

The periodicals chiefly in demand are those relating especially to surgery, pediatrics, psychiatry and otorhinolaryngology. Certain special journals relating to laboratory diagnosis, neurology and biochemistry are also considerably used. Current issues of some British and German specialty journals are also extensively circulated. Most

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* This report was submitted by Professor Chauncey D. Leake, who serves as librarian without salary.

† Previous articles and comments on the State Medical Library of California which have been printed in California and Western Medicine are as follows:

Vol. XXXV, No. 5, page 383, November, 1931, editorial, State Medical Library.

Vol. XXXVI, No. 2, page 118, February, 1932, editorial, California State Medical Library.

Vol. XXXVI, No. 3, page 198, March, 1932, editorial, California State Medical Library.

Vol. XXXVI, No. 4, page 217, April, 1932, "Circulating Medical Library Service for Physicians," Frances B. van Zandt.

Vol. XXXVIII, No. 6, page 421, June, 1933, "State Medical Library of California," C. D. Leake.

Vol. XXXVIII, No. 6, page 446, June, 1933, editorial, State Medical Library of California.

TABLE 1.—*Showing the Increase in Number of Borrowers and Items Loaned from the State Medical Library from October, 1932, to June, 1934*

	Los Angeles			San Francisco		
	October 1932	June 1933	June 1934	October 1932	June 1933	June 1934
Number of borrowers	93	291	334	64	316	412
Items loaned (books and journals)	67	493	538	211	556	490
Number of communities served	22	65	67	29	75	95

items loaned by the State Medical Library are retained by the physician borrowing them for an average of five days. With packing, mailing, and return, an average of nine days per item is consumed before the next borrower may be served through the same item. After circulation, periodicals are filed and preserved. Back numbers of periodicals become available for special consultation. Adequate reference files are now available at both offices for all ordinary requests. Special reference facilities are furnished through the courtesy of the University of California Medical School Library.

GIFTS TO THE LIBRARY

During the past year many gifts have come to the State Medical Library from physicians interested in its welfare. The late Dr. Le Roy Crummer of Los Angeles presented jointly to the State Medical Library and the University of California Medical School Library over 100 rare and valuable medical classics, particularly of the sixteenth century. Two important incunabula were included in this gift. Doctor Crummer also gave the Library over 200 rare medical prints and engravings, which form the basis of a catalogued iconographic collection of some 800 items. Mr. H. W. Sheldon of Berkeley gave 375 volumes from the library of his father, the late Dr. H. W. Sheldon. Over 500 volumes have been received in exchange through the American Medical Library Association. They have been deposited as a working reference library in the Los Angeles office. A very large collection of reprints has also come to the Los Angeles office, where they are being classified and arranged to serve as the basis for a packet library service.

COÖPERATION WITH LANE AND BARLOW MEDICAL LIBRARIES

An effort has been continuously made to cooperate fully with the two private medical libraries in the state, the Lane Medical Library in San Francisco and the Barlow Medical Library in Los Angeles. Wherever possible, physicians are urged to contribute toward the support of these private libraries, and in return to make use of their facilities. The financial circumstances of medical practice are making it more and more difficult, however, for individual physicians to contribute toward the support of these private medical libraries. The demands upon the State Medical Library may, therefore, be expected to increase.

IN CONCLUSION

Surprisingly little difficulty has been experienced in the relations of the State Medical Library with its users. In only one instance has there been undue delay in the return of borrowed items. For this wholehearted coöperation on the part of its borrowers, the State Medical Library is very grateful. It can only function smoothly when everyone using it has a due regard for others who may desire to use it also. As far as possible with the funds available, the State Medical Library is attempting to meet the needs for which it was created. Suggestions and criticisms regarding improvement in its services are always welcome, and will be respectfully considered. At present the chief problem is to conserve to the utmost the funds remaining, in order to maintain the service as long as possible.

University of California Medical School.

HEAT PROSTRATION—ITS TREATMENT AT BOULDER DAM*

By RICHARD O. SCHOFIELD, M. D.
Boulder City, Nevada

DISCUSSION *by Eugene S. Kilgore, M. D., San Francisco; C. Van Zwalenburg, M. D., Riverside; Fred S. Modern, M. D., Los Angeles.*

MAN is able to live and work under great extremes of existing conditions. The work at Boulder Dam in the summer presents an opportunity to see the reactions of man to high temperatures in the presence of low humidity. With these atmospheric conditions there also is added the fatigue due to physical activity, and the combination of all of these factors oftentimes gives rise to impairment of bodily functions to the point of syncopy or heat exhaustion.

INITIAL EXPERIENCES AT BOULDER CITY

When the dam-building project was first started, men were forced to work and live under the most trying circumstances on a hot desert where no conveniences were available. They were poorly housed in tents or in crude shacks, or slept out in the open. The food was of the ordinary camp style and variety, and was prepared and served accordingly. The water was not palatable and was hot. There was a complete lack of facilities for resting or recreation. These conditions made it

* Read before the General Medicine Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

almost impossible for their physical conditions to be up to par, which, combined with the intense heat and low humidity, made for greater susceptibility to heat exhaustion. The summer heat had an average daily maximum temperature of 119 degrees, and an average mean daily temperature of 106 degrees.[4] These were the conditions present during the summer of 1931 at Boulder Dam, in which there occurred possibly 150 cases of heat exhaustion. The usual clinical picture was presented, of pallor, nausea, vomiting, muscle cramps, diarrhea, and unconsciousness.

Many deaths occurred before any aid could be offered. Facilities for care were not the best, yet many recovered after having their bodies cooled by being wrapped in wet sheets, and given rest while in perhaps some shaded spot. Seventeen deaths occurred this first summer.

THE BUILDING OF BOULDER CITY

Following this terrific death toll, we find that Boulder City was built and became a veritable oasis in the desert. Here were provided clean, artificially cooled and well-ventilated dormitories; a great variety of food was made obtainable, which was prepared and served in an appetizing fashion in cool, ventilated dining rooms. An abundance of good water, refrigerated to any desirable temperature, was to be had at almost any point on the project. An artificially cooled movie theater was constructed and well-planned recreation halls were built. First-aid classes were organized to instruct men to watch themselves that they might avoid the effects of extreme heat; they were made to realize that they should stop work when feeling the first effects of heat, instead of trying to continue in the face of danger. They were urged to drink water more freely. The summer was comparatively a cool one, with an average daily maximum temperature of 107 degrees and a daily average mean temperature of 96 degrees.[4] The good condition and well-being of the men, plus first-aid instruction and a moderately cool summer, showed its effects in that no severe heat exhaustions occurred. There were recorded only seven mild cases in which hospitalization was necessary for the patients, all of whom recovered.

BOULDER CITY STUDIES ON HIGH TEMPERATURE EFFECTS

It was during the summer of 1932 that Bock and Dill[1] conducted their research at Boulder City in which they found that physical activities in high temperatures produced great losses of chlorids, as well as water from the body. This loss occurred by sweating. The greatest loss of sodium chlorid took place during the first few days of exposure to high temperatures. During this time the blood chlorids remained at a relatively constant level, and this level was maintained at the expense of the chlorids in the tissues. They called attention to the facts established by Cohnheim, Kreglinger and Kreglinger[2] that a healthy subject is not able to retain water in the body without the presence of sufficient salt in the tissues. It would follow, therefore, that the mechanism of heat exhaustion is that in which the initial disturbances are manifested by muscle cramps due to an actual depletion of chlorids in the tissues, or, to the creation of an imbalance of the sodium, the potassium, and the chlorids.[3] Further disturbances produce syncopy, which is due to an actual lowering of the total blood volume.

The summer of 1933 presented a daily average maximum temperature of 112 degrees and a daily mean average temperature of 104 degrees.[4] Men were constantly urged to drink more and more water, and were directed to use table salt freely—at least one teaspoonful per day. There were thirteen cases of heat exhaustion, nine mild and four severe, and one of the patients was *in extremis*. Considering the very good condition of the men, and the general endeavors made to prevent the occurrence of any heat cases, it is probable that only in one case was the manifestation of heat exhaustion as bad as those encountered during the first summer when seventeen deaths occurred.

CLINICAL MANIFESTATIONS OF HEAT EXHAUSTION

Clinically, heat exhaustion may be manifested in either of two ways: (*a*) The hyperpyrexia patient, whose temperature is upward of 105 degrees, and whose body surface is burning up. First-aid treatment here consists of wrapping the body in wet sheets and packing in ice. (*b*) The subnormal temperature patient, whose body is cold and clammy, and in which the first-aid treatment is that of shock, by the application of warmth. In both types there occurs vomiting, diarrhea, muscle cramps of the skeletal muscles, nystagmus, tossing of the head and body, and unconsciousness. Respirations are rapid and shallow; the pulse is rapid and thready; the blood pressure may be so low as to be unobtainable.

TREATMENT

Prompt care by first-aid attendants is of utmost importance. Treatment consists of restoring normal body temperature by the continuous application of the warmth or the cold, by supplying the needed fluid to a dehydrated body, and by restoring the chlorid balance to the tissues.

Previously, attempts were made in treatment by giving normal saline hypodermoclysis, together with an intravenous solution of 20 cubic centimeters of 10 per cent saline. This concentration proved, at times, to have produced a severe reaction. From that type of treatment we have gradually acquired a therapy by feeling our way along with each case as it presented itself. For intravenous therapy, we are now using normal saline in 7½ per cent glucose solution. This was first given in one liter amounts. Subsequently we have increased the amount. The last case treated was clinically the most severe. In this instance, during the first one and one-half hours we gave, intravenously, 2,000 cubic centimeters of normal saline in 7½ per cent glucose solution, followed in two hours by 1,000 cubic centimeters normal saline by hypodermoclysis, followed four hours later by 800 cubic centimeters intravenous, normal

saline, and this followed in six hours by 1,000 cubic centimeters normal saline by hypodermoclysis. Restlessness and vomiting ceased during the first hour, and consciousness returned in two hours. Fifteen grains of sodium chlorid was then given orally in four ounces of water every four hours. Stimulants of strychnin and caffein were used hypodermically. Ice water enemata were used, as was also continuous external application of cold in the form of ice compresses. The patient quieted down quickly with this therapy and recovered.

It is questionable whether introduction of body fluids could be maintained at this pace in all instances, but the above procedures indicate to what limits this therapy has been extended.

SUMMARY

1. Improvement in living conditions at Boulder Dam, plus preventive measures which encouraged the drinking of more water and the use of more salt, probably have decreased the number of heat cases that occur.

2. Clinical manifestations of heat exhaustion are first evidenced by the disturbances due to the depletion of the chlorids in the tissue cells (muscle cramps), and later by a decrease in total blood volume (exhaustion).

3. Treatment should not only restore the body fluids which have been lost by excessive or prolonged sweating, but should also include a restoration of the chlorid balance to the tissues.

4. The data available in one season for the prevention of heat cases, or in the successful treatment of those that did occur here at Boulder Dam, should not suffice for the determination of any set procedures. Further observation should be made to substantiate the validity of both the prevention and the treatment programs.

Boulder City.

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3. Personal communication from D. B. Dill, Ph.D., 1933.

4. Computation made from United States Government temperature recordings for the month of July.

DISCUSSION

Eugene S. Kilgore, M. D. (490 Post Street, San Francisco).—Doctor Schofield's contribution well illustrates the application of physiology to a clinical problem, with most gratifying results. Interesting in itself, it is the more so because of its newness and also its oldness. The emphasis on salt and water in the treatment of heat exhaustion is new to clinical medicine. Standard medical textbooks do lay stress upon reducing the hyperpyrexia; they mention fluid administration, though with inadequate appreciation of the quantity needed; they generally ignore sodium chlorid; and, in the spirit of times now happily passing, they put the emphasis on treatment by drugs, especially stimulants. But the prophylactic use of sodium chlorid is old—outside the ranks of orthodox medicine. I am told that for a long time slightly salted drinking water has been supplied to the crews of British vessels in the Red Sea, and that they probably adopted the practice from the Arabs, who have followed it from time unknown. Perhaps Christ had in mind more than the gustatory effect when he referred to his followers as "the salt of the earth"; and the credit for the discovery of the importance of chlorid depletion and replacement prophylaxis may belong to some much earlier desert dweller, who tasted the whitish deposit left on the skin by evaporating sweat.

Doctor Schofield's paper deals admirably with the emergency treatment and the immediate, essentially emergency, prophylaxis of heat exhaustion. The slow process of adaptation to torrid conditions is, of course, outside the scope of his present report. This also is a promising research field. It has been partly explored by modern scientists (they have found, inter alia, that in artificial tropics mice increase their cooling surface by growing longer tails, larger ears, and pendulous, hairless scrota), and again, partly *experienced* by ancient, unknown but certainly unorthodox observers. Old descriptions of the marauding nomads of Central Asia, whose success in plaguing Persian towns depended upon the speed and endurance of their horses in the desert, state that in order to toughen the animals they regularly allowed them very little water. Herein is the suggestion that there may be a period preliminary to exposure to dangerous heat when the body may profitably be inured to economy in the use of water—a preparatory management exactly opposite to that which Doctor Schofield has found so beneficial in the actual pinch. It is a suggestion worth the attention of the physiologists, and might lead to a discovery of greater value than those on the measurements of the mice.

C. Van Zwalenburg, M.D. (308 Citizens National Bank Building, Riverside).—In discussing this paper, I wish to emphasize especially dehydration. This is such an essential part of the problem of heat exhaustion that I should like to have the entire profession, and particularly the public generally, consider it almost entirely a dehydration. The demand to replenish this loss of water, as both a preventive and as a cure, appears to me the all-important point in the control of heat exhaustion and sunstroke.

The only protection against excessive heat the body has is the vaporization of water from its surface. Your patient is practically dying from thirst. Fill the blood vessels with fluid. Heat dilates the capillaries, and there is a consequent pouring out of fluid; and the higher the humidity the greater the outpouring of water in the form of sweat in the effort to cool the body—ten, even twenty pounds in one day. Dehydration is evident.

At Boulder Dam, as Dr. Schofield has told you, the instruction to the workers, which goes out constantly, is to drink, drink. Placards at drinking fountains, instructions at weekly first-aid meetings—everywhere people know that they should drink water and, best of all, good drinking water is made easily available. To my mind, Dr. Sansum's letter to President Bechtel in 1931, urging the use of water, should be given much credit for the reduced number of prostrations.

Of course, the demand for chlorids is well understood, and should not be left out of the picture; but for practical purposes, the use of water seems the obvious point of emphasis.

To me the demonstration, that lack of chlorids is alone the cause of miner's heat-cramp, is still incomplete. Intermittent claudication is clearly due to lack of blood in the leg on account of an arteriosclerosis occluding the artery. Why is not a lack of fluid to fill the blood vessels the cause of heat-cramp?

It seems to me of the greatest importance that we inform the public that the prevention of heat exhaustion and sunstroke lies in the drinking of large quantities of water. It was most trying to read of

the appalling number of prostrations all over the country last summer, and not to be able to rush the information to the suffering public that the simple use of water—water—any kind of good water, would prevent these prostrations. The loss of salt is enormous. Taste your arm on a hot day on the desert. Persons exposed to high temperatures for a long time must, of course, replenish the salt lost; but for practical purposes, for the casual exposure, water in large quantities is the remedy.

And, for treatment, intravenous salt solution is just as truly a life-saver as in surgical shock or any other kind of dehydration.

This method has now been used in approximately 150 cases, to my knowledge, at Indio, Berdoo Camp, Imperial Valley, and at Boulder Dam, and the results from all reports are so striking that we are anxious to broadcast it to the profession that practically heat exhaustion is dehydration, and that the remedy is fluid intravenously as long as the patient cannot take it in any other way. This remedy is so simple and so obvious, once our attention is fixed upon it, that it should not be overlooked any longer: vaporization to reduce heat—the pouring out of fluid for vaporization. Heart and blood vessels empty. Death from bleeding into and through the skin. Simple mechanics. Fill the blood vessels. And, for prevention—drink, drink.

Already the general knowledge of the need of more water is spreading. More water is being used, and the lower incidence of heat exhaustion in Imperial Valley last summer (1933) has also been asserted to be, at least in part, due to this publicity. Doctor Schofield has told you what it has done at Boulder Dam.

Fred S. Modern, M. D. (1135 Pacific Mutual Building, Los Angeles).—The syndrome of heat exhaustion that Doctor Schofield describes represents the failing adaptation of the human organism to high temperatures and low humidity. He segregates two main types: one with a dry skin and high fever, and the other with clammy skin and subnormal temperatures. Common to both types are vomiting, diarrhea, muscle cramps, nystagmus, and unconsciousness. Except for heating or cooling of the body, the treatment is essentially the same: that is, the administration of large amounts of normal saline with glucose intravenously, NaCl orally, and stimulation of the failing circulation.

As Doctor Schofield points out, the primary pathological faults lie in the dehydration and depletion of the NaCl stores of the tissues. Which of the two losses is the primary one, and more deleterious, cannot be determined at present without further investigation.

Frederick M. Allen, who advocated the use of a salt-poor diet in the treatment of essential hypertension, has observed that a small number of patients, so treated, developed signs of "salt privation." These signs, namely, pallor, restlessness, loss of appetite, weakness, irritability, and muscle pains, particularly if the calf muscles are essentially the same as Doctor Schofield described, except that they are milder. The daily administration of 2 grams of NaCl to the diet abolished the symptoms in a few days. We find a somewhat similar picture in pernicious vomiting associated with alkalosis.

It would be instructive to follow the CO_2 combining power of the plasma in these patients from coma to recovery. If it is the loss of the chlorids which produces the symptoms, then there should be a progressive decrease; while if it is due to the loss of the neutral salt or the base, there should be no striking change, or there should be an increase in the alkali reserve.

Doctor Schofield's paper is valuable not only for the importance of his clinical and therapeutic observations, but also for the theoretical questions that his presentation raises, and which demand to be answered.

NON-ORGANIC CONVULSIVE DISORDERS OF CHILDHOOD—WITH SPECIAL REFERENCE TO IDIOPATHIC EPILEPSY*

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II†

TREATMENT OF IDIOPATHIC EPILEPSY

THE therapeutic implications from the foregoing discussion regarding the etiologic factors in idiopathic epilepsy are obvious. However, all practical means of affecting the physiological state of the brain cells are very indirect, a fact which places a definite limitation on the degree of therapeutic success to be expected.

The central objective in the routine treatment of this disorder in the individual child is that of preventing seizures and providing, so far as possible, for normal development of his mental and emotional capacities throughout the entire growth period. Obviously, the immediate aim of all therapy is to remove or at least alleviate the causative abnormalities, so far as these can be identified. The variety of circumstances and agents capable of influencing the occurrence of seizures is so extensive that continuous search must be made for such factors, and repeated therapeutic trials may be necessary before success is attained. Because of the protean nature of the contributing or inciting causes, there is perhaps no other clinical disorder that requires so high a degree of individualization in treatment as epilepsy.

Surgery has a very limited field of usefulness in the present-day treatment of idiopathic epilepsy. It is true that removal of greatly hypertrophied adenoids and tonsils, which obstruct the respiratory passages, and of certain "irritative" lesions, either within or outside of the skull, may be of benefit in the exceptional case. However, the radical operations on the skull, brain, and cervical sympathetics, sometimes advocated without special indications, are to be deplored. It would seem desirable some time in the future, when functional charting of the diencephalon has been completed, to test the efficacy of surgically produced diabetes insipidus in those severe epileptics whose seizures can be successfully prevented by stringent water restriction. The physiological state in diabetes insipidus appears on the surface to be almost ideal for the prevention of seizures in that a negative water-balance is always imminent.

The various aspects of the medical treatment of idiopathic epilepsy in children are schematically represented in Figure 5. The relative importance, which we would attach to the various available therapeutic measures, is indicated by the size of the sector assigned to each. Long experience has

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† Guest-speaker paper. Read before the general meeting of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

Part I of this paper was printed in July issue, California and Western Medicine, page 1.

TABLE 2.—*Sample Diet for Epileptic Child 12 Years of Age, Weighing 44 Kg., F. 195, P. 66, C. 18 Grams (48 Cal. per Kg.) K/AK= 2.7. Total Water 968 cc. (22 cc. Per Kg.) Drinking Water 214 cc.*

Food Materials	Amount	Water	Fat	Protein	Carbohydrate	Excess Acid	Excess Alkali
Breakfast	Gm.	Cc.	Gm.	Gm.	Gm.	cc. 0.1 N	cc. 0.1 N
Bacon, medium lean	30	6	19	3	....	19	....
Eggs—2	100	73	12	13	....	160	....
Forty per cent cream	40	23	16	0.8	1.2	.....	10
Cocoa shells	60	60	....	....	....	.....	....
Orange	75	65	....	....	4.5	.....	56
Butter	20	3	17	....	....	.....	....
Bran squares—*ad lib.*							
Totals		230	64	16.8	5.7	179	66
Dinner							
Lean meat (cooked)	50	24	4	12	....	62	....
"Five per cent" vegetables	100	92	....	1	3	....	65
French dressing, special	10	3	6	....	0.2	9	....
Brazil nuts	15	1	10	2.5	1	....	9
Green olives (preserved)	15	12	2	0.3	0.3	....	30
Milk "substitute"	100	76	20	4	1	....	12
Butter	20	3	17	....	....	....	....
Bran squares *ad lib.*							
Totals		211	59	19.8	5.5	71	116
Supper							
Beef, mutton or turkey, medium fat	140	84	28	25	....	154	....
"Five per cent" vegetables	150	138	....	1.5	4.5	....	97
Avocado	30	18	7	0.6	2.0	....	22
French dressing, special	22	7	13	....	0.4	19	....
Cream forty per cent	30	18	12	0.6	0.6	....	7
D'Zerta one serving	2	50	....	1	....	10	....
Butter	15	1	12	....	....	....	....
Bran squares *ad lib.*							
Totals		316	72	28.7	7.5	183	126
Totals for day		757	195	65.3	18.7	433	308

demonstrated that the best plan of therapy is one which simultaneously utilizes all factors known to favor prevention of seizures. For the sake of convenience, however, the different aspects of the treatment will be discussed separately.

Mental and Physical Hygiene.—Under the general heading of "Hygiene," it will be observed that the sector for mental hygiene far exceeds in importance that for physical hygiene. As regards the latter, it is obvious that removal of all physical abnormalities is a rational procedure, and that establishment of good physical health habits is desirable. Regular muscular exercise in the form of interesting constructive work, or of supervised outdoor play, is helpful. Idleness, especially when it follows long periods of regular and active work, is conducive to seizures. Overeating, a common habit among epileptic children, should be prevented.

The importance of the mental hygiene factor in many cases of epilepsy can hardly be overestimated. The patient and those associated with him may fail to recognize the relationship between certain mental stresses and the occurrence of seizures until this is pointed out to them by the physician who recognizes the significance of such intangible factors. Periodical surveys of the emotional experiences and the social relationships of the epileptic child should be made with the hope of avoiding situations involving mental conflicts, undue excitement and unnecessary anxiety of all kinds. An uncongenial school or home atmosphere and work requirements, or responsibilities beyond the capacity of the patient, may account for his failure to respond satisfactorily to other forms of therapy. No effort should be spared to improve the disdainful attitude of the public toward the epileptic and his problems. The child should be made to acquire a philosophy of optimism and self-reliance without conceit. So far as possible, his environment and his activities should be those arranged for the normal child. So long as he shows little or no mental deterioration, he is better

TABLE 5.—*General Guide for Calculating Diet*

1. *For Children of Pre-School Age:* (or body wt. up to 19 kg.)
   Total water .....40 to 30 gm. per kg. of body weight
   Protein ..... 2.0 gm. per kg. of body weight
   Carbohydrate ..... 0.7 gm. per kg. of body weight
   Fat (gm.) $= \frac{60 \times \text{kilograms of body weight.}}{9}$

2. *For Children Between 5 and 10 Years:* (or 20 to 32 kg. body weight)
   Total water .....30 to 20 gm. per kg. of body weight
   Protein ..... 1.5 gm. per kg. of body weight
   Carbohydrate ..... 0.5 gm. per kg. of body weight
   Fat (gm.) $= \frac{50 \times \text{kilograms of body weight.}}{9}$

3. *For Children Above the Age of 10 Years:* (or above 33 kg. body weight)
   Total water .....25 to 15 gm. per kg. of body weight
   Protein ..... 1.5 gm. per kg. of body weight
   Carbohydrate ..... 0.4 gm. per kg. of body weight
   Fat (gm.) $= \frac{40 \times \text{kilograms of body weight.}}{9}$

off in a private home, or in the regular schools with normal children, than in an epileptic colony or institution.

Dietary Regimen.—For the great majority of growing children with idiopathic epilepsy, the dietary regimen would seem at the present time to be the most promising therapeutic measure available, because it may possibly alter the physicochemical state or the metabolic activity of the body in a direction favorable to correction of the underlying disturbance in brain-cell physiology. Continuous use of effective dietary therapy throughout the entire period of growth might not only prevent mental deterioration and structural damage to the brain by preventing convulsions, but might actually result in permanent correction of the underlying defect.

Without a preliminary trial it is practically impossible to determine which patients will, and which will not respond favorably to dietary treatment. Preliminary encephalographic studies promise to be of assistance in this connection, according to the recent work of Eley,[17] who found that 90 per cent of cases showing normal encephalograms responded favorably, while only 12 per cent of those showing abnormalities improved under such treatment. The metabolic state following three or four days of fasting appears to be ideal for the prevention of seizures. A preliminary fast of this duration or longer, with moderate water restriction, is probably the best test. If a patient does not respond to this procedure, it is not likely that he will be greatly benefited by the ketogenic type of diet to be described later. All three of the major effects of fasting, namely, the endogenous production of sedative agents (acetone bodies), shifting of the acid-base equilibrium toward the acid side, and the development of a negative water-balance, theoretically lower nervous excitability, possibly by their combined effect on cell membrane permeability.

Ketogenic Diet.—Since the beneficial effects of starvation disappear when the fast is terminated, Wilder[18] suggested the use of a ketogenic diet which would furnish a metabolic mixture similar to that found in the fasting state. Results from the use of this type of diet have been very favorable under ideal circumstances. For practical purposes, diets are calculated on the assumptions: (1) that 46 per cent of the protein and 90 per cent of the fat by weight is ketogenic, and (2) that 58 per cent of the protein, 10 per cent of the fat, and 100 per cent of the carbohydrate, is antiketogenic. To be ketogenic, a diet must contain a proportion of fat in excess of that indicated by the formula of Woodyatt ($F = 2C + {}^{P}/_{2}$), and at the same time not exceed the caloric requirement of the patient. It is essential to maintain a high degree of ketosis by keeping the carbohydrate content of the diet low, if maximum effects from the diet alone are to be expected. This is indicated by the presence of strongly positive tests for aceto-acetic acid and for acetone in the urine. When the diet is to be used over a long period of time, as it should be if the patient responds favorably, it must be constructed with the utmost care to avoid deficiencies of all kinds. The total caloric, protein, mineral and vitamin requirements can easily be met if planned for.

Since alkalosis tends to provoke convulsions in the epileptic subject, the purpose of the ketogenic diet can be defeated by the presence of an excess of fixed base. It has been found desirable, therefore, to omit the use of baking soda and other alkalis, and to select dietary constituents, so far as possible, whose end-products after complete metabolism are predominantly acid. Practically all fruits and vegetables, excepting cereal grains, have an alkaline ash, while the latter and all proteins have an acid ash. Because it is desirable to include as much fresh vegetable food in the diet as the carbohydrate and water allowances will permit, it is occasionally found helpful in severe cases to supplement the diet with the quantity of weak hydrochloric acid, or of acid-forming salts (such as ammonium or calcium chlorid) necessary to neutralize the excess alkali occurring in the vegetable constituents.

Restriction of Total Water Intake.—As pointed out above, stringent restriction of the total water intake tends to prevent convulsions in many cases of severe epilepsy, even when the patient is on a non-ketogenic diet and is taking no drugs. There is usually an initial loss of weight as in the case of fasting or the use of the ketogenic diet. However, in the majority of severe cases the degree of water restriction required for control of seizures is so stringent that continued coöperation on the part of very young patients is almost impossible to obtain without constant supervision. No exact rule regarding the amount of water to

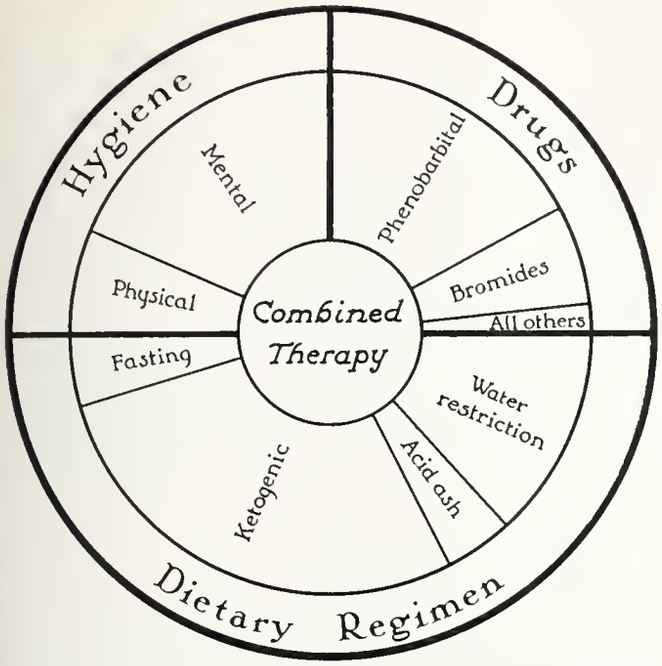

Fig. 5.—Graphic representation of the various aspects of antiepileptic therapy as applied to children. Relative importance of each factor indicated by size of sector.

be allowed can be laid down for application in all cases, because the requirements vary so widely for different conditions, such as age, muscular activity, and atmospheric conditions. After seizures have been brought under control, sufficient water must be given with the diet to meet all of the physiological requirements, including the process of growth, with unimpaired efficiency. Since sweet milk, which is especially desirable for younger children, cannot be given in adequate amounts, an incomplete substitute can be made by adding 3.5 grams of casein powder (casec) and 46 grams of water to 50 grams of heavy cream, and seasoning the mixture with saccharin and salt. The regimen must be sufficiently elastic to permit adequate adjustment to changing requirements.

Practical Management of the Dietary Regimen. Experience in the practical management of the dietary regimen has demonstrated that a combination of the foregoing dietetic principles yields more satisfactory results from all points of view than any single regimen alone. A preliminary fast of several days' duration is often desirable. Moderate restriction of the total water and salt intake in conjunction with the ketogenic diet permits a more liberal allowance of carbohydrate, while use of a mildly ketogenic or borderline diet in connection with the low-water exchange regimen makes the degree of water restriction required for control of seizures less extreme and so more tolerable to the patient. The addition of some acid-forming salt (as a substitute for table salt) and very dilute hydrochloric acid (as a substitute for vinegar in salad dressings and pickles) in amounts at least sufficient to neutralize the excess base in alkaline-ash foods, increases the effectiveness of either of the above regimens alone or of the two in combination. The combined regimen is most likely to be effective when the specific gravity of the urine ranges above 1028, and the urine color changes to a deep brown (positive test for diacetic acid) upon addition of an excess of 10 per cent ferric chlorid solution. The constituents of the diet should be carefully weighed, especially at the beginning of treatment, and until they can be fairly accurately estimated. The diet must be made varied and attractive.

To simplify calculation of the ketogenic, low-water diet according to the total caloric, protein and water requirements for children of different ages and weights, the general guide shown in Figure 8 can be employed. All that is required for its use are knowledge of the patient's age and weight, and a standard table of food values. The factor, by which the body weight is multiplied in the equation for estimating fat, is one derived more or less empirically from average figures for caloric requirements of children under conditions of moderate activity. Variations in its value for different ages or weights involve assumed differences in protein and carbohydrate as well as caloric requirements. Diets calculated according to this guide should provide a metabolic mixture having a ketogenic to antiketogenic ratio of approximately 3 : 1. The water allowance per unit of body weight is inversely proportional to the age, the larger allowance being intended for the younger and the smaller for the older children. Individual readjustments in the diet must be made from time to time according to the patient's response. Most of the foods suitable for this type of diet are given, for the sake of convenience, in Table 1. The values as listed are for uncooked foods. Baking causes a loss of from 20 to 30 per cent in the water content of meats and vegetables. A sample menu calculated from this table on the basis of the above guide is presented in Table 2.

Drug Therapy.—Drug therapy for epilepsy in children has tended to become less important since the introduction of the dietary regimen outlined above. Nevertheless, for the vast majority of patients being treated in general practice, special medication still holds a prominent place, if indeed it is not the only type of therapy available. Where possible, drugs should be used merely to supplement the forms of management already described. *Phenobarbital* or luminal is the most satisfactory single agent so far discovered for control of seizures over long periods of time. The dose for children varies between one-half grain (0.03 gram) once daily, and one and one-half grains (0.09 gram) twice daily. The time-honored *bromids,* which have been almost completely replaced by phenobarbital because of their disagreeable taste, their unpleasant effect on the appetite and their tendency to cause unsightly skin eruptions, still hold a place of usefulness in those cases which for any reason respond unsatisfactorily to this newer drug. Theoretically, the acid-forming salts, $CaBr_2$ and NH_4Br, should be superior to the sodium and potassium salts, because they possess an acidogenic as well as the sedative action. It is well known that a low NaCl intake enhances the

therapeutic effects of the bromid salt. Children require larger doses of bromids per unit of body weight than do adults, the dosage for the former ranging between 15 to 45 grains (1 to 3 grams) daily in divided doses. Other medicinal agents, such as atropin, calcium and magnesium salts, ephedrin, parathormone, iodids, borotartrates, diuretics, cathartics and opiates, may be helpful in rare cases under special conditions, but they hold only a small place in the therapeutic scale.

Management of the Patient During Convulsions.—This phase of our discussion would be incomplete without reference to the subject of management of the patient during convulsions. Practically all that can be done for the patient during a seizure is to protect him against bodily injury. This necessitates constant companionship, especially in severe cases which have no warning aura. If the patient is standing or sitting when a seizure begins, he should be placed on the floor or a bed with a soft support for his head. His clothing should be loosened about the neck, and a wedge of soft wood or firm rubber should be placed between his teeth to prevent biting of the tongue and lips. Repeated severe convulsions occurring at frequent intervals (*status epilepticus*) are undoubtedly harmful and even dangerous to life, a fact which necessitates the use of heroic therapeutic measures. Ether or chloroform inhalation by means of a face mask to a stage of light anesthesia is probably the safest and most successful method for immediate control of the seizures. Sodium amytal or chloral hydrate and ammonium bromid should then be administered per rectum, in doses appropriate for the age, every two hours for two or three doses. Thereafter, the patient can be given other medication by mouth. A single dose of from 2 to 8 grains of luminal sodium may be given intravenously or intramuscularly in 5 cubic centimeters of physiological saline solution as a substitute for the amytal or chloral. If facilities are available for the administration of respiratory gases, a mixture of 10 per cent carbon dioxid and 90 per cent oxygen may be more desirable than chloroform or ether in exceptional cases, but in our experience is less effective in the majority of instances. Drainage of fluid from the subarachnoid space by lumbar puncture, while the patient is under the anesthetic, is a common practice. As soon as medication can be given by mouth, several large doses of magnesium sulphate should be given for the dehydrating effect. The diuresis following the administration of urea in doses of 10 to 15 grams every six hours is probably just as effective in this regard, and is less distressing to the patient. An initial intravenous injection of hypertonic sucrose solution to cause withdrawal of water from the brain would be a rational procedure, since this sugar is later excreted quantitatively in the urine. Fasting and moderate restriction of the water intake for two to three days after recovery from an attack of *status epilepticus* prepares the patient for a new start on the regular therapeutic regimen.

SUMMARY

Idiopathic epilepsy, as the most obscure representative of a large group of so-called functional convulsive disorders, is discussed from the points of view of etiologic mechanism and therapy.

The etiologic problem is considered from two main aspects: (1) that relating to the underlying abnormality responsible for the characteristic proneness to convulsive seizures, and (2) that concerning the contributing factors.

The relative merits of each of the several types of available therapy are discussed. Simplified procedures for calculating the special diets advised are presented. The desirability of utilizing all of the tried therapeutic measures simultaneously is emphasized.

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UROLOGY IN MEDICINE—ITS FUTURE RÔLE*

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IT is not, of course, of future developments in urological knowledge and inventions that this paper will treat. My subject is, rather, the relative rôle of urology in medicine, its increasing importance and even fuller recognition as a specialty. And since our one way of prognosticating the future is by carefully scrutinizing and analyzing the past, and so measuring what has been done in order to realize what can be done, it may be profitable to consider the evolution that has made our specialty what it is.

Urology, as we know it today, has not advanced and developed along a certain well-defined medical highway, but has turned into so many detours and branches, that only at the present time has it become a strictly separate department of medicine. It has not always been confined to what most of us now consider its special field, nor have its requirements always been so broad.

THE LITHOTOMIST OF ANCIENT DAYS

The lithotomist, evidently, was the only Simonpure specialist of ancient times; for, while the Hindus had some knowledge of stricture, and wrote of various diseases of the bladder, making use of different types of urethral sounds and cannules, as did Hippocrates, together with the important subject of nephrotomy, these subjects were, rather, the general knowledge of the physician, not of the specialist.

The Hippocratic Oath singles out those who may cut for stone, as those skilled in this work who, apparently, performed no other kind of surgery. Similarly, we find in the Middle Ages that stone-cutting was confined to those skilled in this art, many of them ignorant of even the rudimentary medicine known at that time. Such were the wandering Norcians of Italy, who flourished for several generations.

Advance in urology has been intimately associated with progress in other fields of medicine, surgery, pathology, and allied sciences. Invaluable discoveries in chemical and physical adaptations to medicine have been numerous. Without anesthetics, for instance, few indeed of our delicate modern examinations could be carried out, or our difficult operations performed.

Our armamentarium, diagnostic and therapeutic, both medical and surgical, was immeasurably enlarged, in the last quarter of the nineteenth century by brilliant discoveries in bacteriology and the development of urinary analysis, especially that part, of vital importance to our specialty, renal function tests.

From the earliest times, man's mechanical ingenuity has been exerted to produce instruments for crushing stones, for prostate and other bladder operations. But in considering these medieval inventive steps which led to the modern lithotrite and resectoscope, one must wonder, not at the mortality following the operations, but that any patient lived through them.

SUBSEQUENT PROGRESS

It is not remarkable that progress was negligible up to the time of Paré, for instance, who in the sixteenth century produced his instrument for removing "carnosities" of the bladder;[1] for the index of his anatomical knowledge is revealed by the belief, held at that time that the prostate and seminal vesicles were one organ. Guthrie, in 1830, was the first to base operative decisions upon "a median bar," as distinguished from operations upon the prostate.[2] He, together with Mercier[3] and Civiale, developed excisors and incisors for vesical obstruction. The latter's lithotrite was the first workable instrument of its kind.[4]

A beginning had also been achieved in visualizing the urethral canal and bladder cavity. At Frankfort, in 1806, Bozini was employing his "Lichtleiter," a funnel-shaped speculum, into which the light of a shaded lamp was reflected.[5] Twenty years later a slight improvement was made by Ségalis, who used a circular and a conical mirror, with candle-light reflection.[6] In 1852 Désormeaux, with his endoscope lighted by an alcohol-turpentine lamp and a system of reflecting mirrors, was able to observe the urethra, and he, it was said, destroyed a papilloma.[7] But it was not until more than a quarter of a century later that Nitze (1887) incorporated the incandescent lamp in his cystoscope, having already discarded the platinum loop, water-cooled instrument, which he had produced and first used in 1876.[8]

NITZE'S CONTRIBUTION

This Nitze, inventor of the greatest mechanical and scientific aid to urology, lived to see the medical world utilize his discovery, and make possible diagnoses and treatments that have been such a boon to those suffering from conditions which are with us from the cradle to the grave. The beginning of our lives, it has been said, is a striving to hold our water; the latter years, another struggle to pass it. What a pity that this famous urologist could not have lived even longer, to see what is virtually a monument to his skill, patience, and wisdom—and to that of his talented successors Young, Caulk, Stern, McCarthy, Davis, and others. I mean, of course, the modern prostatic resectoscope, that triumph of engineering and medical science, which we twentieth century urological surgeons are privileged to use. Although the resectoscope may not accomplish all that its most enthusiastic supporters claim, it is invaluable to urology.

To present the above as even a meager outline of the development of the mechanical side of our specialty, may seem like presumption. But the limitations of such a paper as this require that even less space be given to the important contributions involved in operative procedure, and the evolution of the urological surgeon through his increased knowledge and opportunities.

* Chairman's address, Urology Section of the California Medical Association, at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

* For further historical information dealing with urology California and Western Medicine is printing in this issue an excerpt from the Budapest correspondence in J. A. M. A., Feb. 10, 1934. (See adv. page 37.)

Celsus tells of the struggling wretch of a patient, two thousand years ago, held by the operator's burly assistants, while the surgeon tore and cut his way into the bladder, with no heed for the shocking loss of blood, or, at best, an attempt to control this by seating the sufferer in a solution of strong vinegar and salt. Contrast this with the operative patient under spinal anesthesia today, his mind normal, active, his body free from pain, although undergoing a serious bladder operation. Each step of the operation is being carried out precisely, unhurriedly, by the surgeon; bleeding vessels, as met, are controlled; and should the hemorrhage become alarming, blood transfusion—previously provided for from a typed donor—is promptly resorted to.

MODERN ARMAMENTARIUM

With what a feeling of confidence can we now approach a surgical problem! Through diagnostic means, as well as our knowledge of pathology, the urologist is almost as fit to deal with the diseased organ as though he had seen it, had held it in his hand. The x-ray, with the aid of the cystoscope and the proper media, has outlined its morphological aspects. Changes of the pelvis in size and contour, and also of the kidney in case of large hypernephroma, of the ureter in stricture, of the bladder diverticuli, for instance, are made known. Foreign bodies have been discovered, and through fluoroscopy, dynamics of expansion, contraction and dilation, have been demonstrated. The functioning of the kidneys has been tested by numerous excretory and retention tests. Through the use of the urethroscope and cystoscope, the whole of the lower urinary tract has been closely scrutinized. Of course, the operator of today does not rely wholly upon laboratory findings; in addition, he takes cognizance of clinical symptoms, which are as important as ever. This medical knowledge he shares with his immediate predecessors, as well as with those of medieval and ancient times.

PROGRESS IN DIAGNOSIS

The indications for operation have increased, of course, with progress in diagnosis and operative technique. When Hévin (1778) made his report to the Royal Academy of Surgery, he concluded that kidney operations "should be confined to the opening of a pus swelling in the loin . . . and to removal of calculi in fistulous tracts." As to nephrotomy, it was questionable whether it should be practiced, "except as a last resort."[9] This opinion formed the basis of kidney surgery for nearly a hundred years; probably until a short time before Simon, in 1869, performed the first planned nephrectomy.[10] Even when Henry Morris, twelve years later, performed nephrolithotomy, he entertained grave doubts as to the operation for kidney stone being justified, under the then existing status of diagnosis of renal lithiasis.[11] And at this time (1881) Hahn came to the conclusion that nephrectomy for movable kidneys—which had been practiced to a limited extent—was unjustifiable, unless the pathology present in the kidney itself indicated removal; and that nephropexy, which he termed nephrorrhaphy, and was the first to carry out, was the operation indicated.[12]

OTHER ADVANCES

With the increase in our knowledge and experience, plastic surgery of the urinary tract has developed to such an extent that, in innumerable operations, organs, which formerly would have been sacrificed to remedy the condition, have been saved. In 1886, Trendelenburg—probably the first to use plastic surgery in urology—attempted the relief of a hydronephrosis by section of the pelvoureteric junction.[13] He failed; but this preliminary, together with the successful resection of a part of the upper ureter, and its implantation in the pelvis of a solitary kidney by Kuster in 1891, was the forerunner of such brilliant plastic results as have led to real conserving of these vital organs.[14] Allied with plastic surgery, is resection of certain nerve filaments in nephralgia of undetermined origin; Papin reporting the first case of renal sympathectomy in 1921.[15]

Improvement in our knowledge and treatment of the lower urinary tract has kept pace with all this. The earliest bladder operation was for removal of a stone, its presence being considered the only indication for surgical interference at that time. Contrast this comparatively simple removal by lithotomy with that marvelous triumph of surgery, physiology, medicine—cystectomy; a cystectomy, which includes transplantation of ureters, often requires a preliminary nephrostomy, and ultimate removal of the entire bladder.

One regrets the impossibility, in a sketch such as this, of calling the roll of those great names of surgeon-discoverers who, inventive step by step, paved the way to this and similar achievements.

Up to the twentieth century there were comparatively few genuine, specialized urologists. Many whose names are associated with great advances in our specialty were not only urologists, but were interested in other surgical problems. One of these, William Chesselden, famous English lithotomist (1688-1752) "cut for stone" in fifty-four seconds, according to an interested observer, but was noted also for "couching" in cases of cataract. On the other hand, Sir Henry Thompson about a century later devoted his entire time to urology. In other countries, surgeons did not confine themselves to our specialty, although giving particular attention to it. Dr. Samuel P. Gross, the earliest surgeon of eminence in our own country, author in 1850 of "Diseases of the Bladder, Prostate, and Urethra"—a classic in medicine—was a general surgeon. This condition holds true through the latter half of the nineteenth century, specific instances being Watson, Van Buren, Bigelow, and the elder Keyes. It is true, also, of our own local operators—Chismore, a gynecologist, and Goodfellow, a general surgeon. Up to the beginning of this century, it is only occasionally that we find such a man as Civiale (1818), who was, strictly speaking, a urological specialist. But the last three decades have seen the situation completely reversed. By far the greater proportion of urological research and operative work has been, and is being done by urologists.

UROLOGY AS A SPECIALTY

Recognition of urology as a strictly limited specialty is a consequence of the work of Von Lichtenberg, Joseph, Marion, Papin, McCarthy, Brasch, and innumerable other famous and talented men. Special credit is due to H. H. Young, whose executive ability, work, and influence have been an inspiration not only to the Johns Hopkins group, which his school of thought developed, but to urologists all over the world. It is these men whose names are significant to the medical world as urology's own. Yet, outside of our own lines, there still are surgeons who continue to render us invaluable aid. Among them was R. C. Coffey of Oregon, whose recent tragic death has deprived the medical world of one of its foremost figures.

But medical men now look to us for assistance, and laymen have been educated to come direct to us for relief, realizing that this is best accomplished by those who are specially trained to both recognize and treat urological cases. This belated recognition has progressed rapidly in the last fifteen years, and is evidenced in the assignment of a constantly increasing number of beds, and greater appropriation to urological services, in hospital and out-patient departments. As late as 1911, Dr. Hugh Cabot, addressing the American Urological Association, made this statement: "It, however, remains a fact that in the eastern portion of the country, at least, serious doubts still exist as to the propriety of giving, to those who wish to pursue this subject, opportunities and hospital accommodations which will enable them to do their work in a satisfactory and profitable environment. . . . There was not in New England, until within the last few months, a single large hospital making any separate or distinct provision for the study of urology, except in the out-patient department, and no surgeon controlled any beds for the prosecution of this work."[16]

A QUALIFICATIONS BOARD

As to the future—How will urology develop in its relation to medicine in general? What will be the requirements and limitations of the specialist? And what medical body will determine and pass upon his qualifications?

Today, any youthful graduate from a recognized medical school may take an examination before the State Medical Board and, within the very hour in which he receives his license, he may legally begin the practice of a specialty. No board in authority says to him, "You shall first serve a certain apprenticeship in your specialty. You shall first have gained a certain amount in experience and knowledge. You must be equipped to such and such a degree, before you may announce to the public that you are specializing, and qualified to treat these certain ills, most of which require years of study and practice; special training under competent instructors, including actual, specialized experience during these years in the operating room."

In some countries, corrective measures have been initiated. During the last few years Europe has progressed in recognition and plans for control of the specialties. Illustrative of this is the excellent system in vogue in the Scandinavian countries, which provides for a specialists' committee, elected from members of the medical association, to pass upon the qualifications of applicants for recognition as specialists. The decision of this committee is not final. The applicant, if rejected, has the right of appeal to the supreme board of the medical association, which may overrule the decision by a two-thirds vote. Basic requirements are that the applicant must have graduated six years before making application for specialist recognition, must have had one year's interne service and at least two years' practical work outside his special field. Specific requirements vary for the different specialties, but make obligatory two or three years, at least, of special training.[17]

Another instance of the practical working of such a system is in Germany's Deutsche Aerzteverein. Although a specialist may practice without consulting this association, as a matter of fact he cannot; for all contracts are made by the Aerzteverein with the Kranken Kasse, to which 80 per cent of the people belong. Lacking this connection with the Kranken Kasse, it is virtually impossible to establish a practice, to receive an appointment on hospital staffs, or to have patients referred to one. So that, actually, all specialists apply to the Verein for recognition.

In our own country, boards to certify specialists are being formed to bring about standardized improvements and appropriate measures of control. Legal compulsion is not contemplated; yet public opinion, as well as professional pressure, will ultimately bring about recognition of, and deference to, these boards. Gradually hospitals will come to limit appointments to, and physicians will choose for consultation, only those certified by these boards, and this will inevitably work toward elimination of those not properly qualified.

Approval by the American Medical Association, with its broadcasting to this effect by radio and in the newspapers, its publication of a description of boards contemplated and its announced listing of specialists—all this is of the utmost importance to our campaign.

To date, control boards have been formed in the fields of ophthalmology, otolaryngology, dermatology, gynecology, obstetrics, pediatrics, and roentgenology.[18] But work on a urological board was begun only in 1932, when the American Association of Genito-Urinary Surgeons appointed a committee to investigate and report upon this subject. The committee's report, the following year, was affirmative; it recommended that, in coöperation with the American Medical Association and American Urological Association, such a board should be established. These associations have duly conferred, and plans are actively perfecting for the creation and functioning of the board.

IN CONCLUSION

The human body is not a clearly charted map, cut up into sections, each of which is the undisputed domain of this surgeon or that. To the

urologist, of course, the ideal arrangement would seem to be that all genito-urinary organs are his sphere, exclusively. But as yet the borderline is not so distinctly delimited. The establishment of this long-desired Board of Urology will be a crucial step forward toward the time when the dabbler in cystoscopy, for instance, who tries to do the work of a specialist, will be outlawed. Likewise, the general surgeon or medical man—untrained in urology and lacking certification by the Urology Board—who attempts the resection of a prostate will not be tolerated.

We have no grievance against the physician or surgeon who feels that he is entitled to use some or all of the armamentarium of the urologist, provided always that he has been trained to do this; provided, also, that his skill shall be continuously, and not occasionally, employed, and that he be familiar with developments taking place in this specialty. But urologists who, as we have seen, have lifted their specialty out of the depths, out of laymen's hands, may confidently expect that ultimately we, as specialists, shall be restricted to the practice of urology, and that—the work of urologically competent physicians and surgeons excepted—that practice shall be definitely limited to us.

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SERUM PRESERVATIVES*

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Discussion *by K. F. Meyer, Ph. D., University of California.*

RECENT demands for the preparation of human serum for parenteral injection have resulted in the use of a variety of technical procedures, probably in no instance meeting the federal standards for serum production. There is indeed, perhaps, no situation in which state and local standards vary so widely from federal standards as is true in the realm of biologic products. Yet each move in the development of federal standards has represented careful thought, careful tests, and a background of experience which is not generally recognized.

PRESERVATIVES IN SERUM AN OLD PROCEDURE

The use of preservatives in serum has been a procedure of long standing. Present practice has made it evident that the background for this step is not understood. In brief, serum produced under federal regulations is usually chemically purified, and, even if not, is filtered. Preservative is added to a product which is supposedly sterile, and the mixture not only stands for long periods before it is released, but repeated tests for sterility, carried for seven days each, animal inoculations for tetanus and for excess of preservative, all are carried through.

SERUM PRESERVATIVES MUST BE USED WITH CARE

It may be granted that emergencies have demanded shorter methods, but one should not lose sight of the fact that serum preservatives have been used with care and with one motive, namely, to prevent spoilage of a very exceptional bottle which, in spite of all tests, might be lightly contaminated. By all proper legal procedures, these contaminations would have to be very rare, and of these rare contaminations, pathogens would form the smallest percentage. In other words, our practice with regard to preservatives has never been intended to take care of anything but accidents, against which every precaution is taken. That it is thus illogical to make the assumption that the addition of preservative offsets other errors becomes evident; yet recent conditions have made it clear that the point is not well understood.

STERILITY TESTS LIKELY TO MISLEAD

Another fundamental point has been missed in the rush of events. The range of activity of preservatives falling within limits which prevent bacterial development, but do not kill, is not clean-cut. Cell functions may be variously upset without destruction of the organism; and, under proper conditions, normal functions may be resumed. In other words—and this should be clearly emphasized—tests for the presence of living organisms in a preserved product are by no means a

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TABLE 1.—*Subcultures from Serum Inoculated with Staph. aureus, Preserved with Merthiolate*

	1:5,000		1:10,000		1:50,000		Control	
	Agar	Broth	Agar	Broth	Agar	Broth	Agar	Broth
*Immediate	+	....	+	....	++++	.....	++++	.....
20 hours	+	—	+	—	++++	+++	++++	++++
44 hours	—	—	+	—	+++	—	++++	++++
6 days	—	—	+	—	+++	+++	++++	++++

* Since the organisms in serum at this time must have been nearly 100 per cent living, this "immediate" series serves as a bacteriostatic control on technic, and renders the interpretation more cautious, *i. e.*, bacteriostasis in subcultures is marked but not complete, in agar, but is complete in broth.

simple matter of broth or agar inoculation in the usual manner. On one extreme, broth inoculated with preserved serum may show growth, if living organisms are present, in a few hours; on the other extreme, broth so inoculated will never show growth, although living organisms are inoculated. Between the extremes, broth may show growth after a decided delay, which accounts for the seven day federal sterility test. Actual delay probably rarely exceeds seven days, except with spores, but sight should not be lost of the fact that living organisms may not be revealed by this technique at all. This latter extreme is by no means unusual. It is due, of course, to the fact that the preservative carried to broth with the inoculated serum is sufficient to prevent the multiplication which reveals itself as turbidity of the broth. A good preservative is a good inhibiting agent. But it is by no means reasonable to argue that, because the small amount of preservative carried to broth prevents growth in broth, hence the greater concentration of preservative in serum makes that serum foolproof. Organisms can still remain viable in the serum for days, and, on

TABLE 2.—*Subcultures from Serum Inoculated with B. Coli, Preserved with Merthiolate*

	1:5,000		1:10,000		1:50,000		Control	
	Agar	Broth	Agar	Broth	Agar	Broth	Agar	Broth
*Immediate	+	....	++	....	+++	.....	++++	.....
20 hours	+	—	++	—	++++	++++	++++	++++
44 hours	—	—	+	—	++++	++++	++++	++++
6 days	—	—	+	—	++++	++++	++++	++++

TABLE 3.—*Subcultures from Serum Inoculated with Staph. aureus, Preserved with 1:5,000 Merthiolate, 1:1,500 Chinosol, and held at Room Temperature*

	Merthiolate		Chinosol		Control	
	Agar	Broth	Agar	Broth	Agar	Broth
*Immediate	+	....	++	.....	++++	.....
20 hours	+	—	+	—	++++	++++
44 hours	—	—	++	++++	++++	++++
6 days	+	—	+	++++	++++	++++

TABLE 4.—*Subcultures from Serum Inoculated with Staph. aureus, Preserved with Chinosol*

	1:1,000		1:1,500		1:3,000		Control	
	Agar	Broth	Agar	Broth	Agar	Broth	Agar	Broth
*Immediate	+	.....	++	.....	++++	.....	++++	.....
20 hours	++	++++	+	++++	+++	++++	++++	++++
44 hours	++	++++	—	+++	++	++++	++++	++++
6 days	++	++++	++	++++	++	++++	++++	++++

TABLE 5.—*Subculture from Serum Inoculated with B. Coli, Preserved with Chinosol*

	1:1,000		1:1,500		1:3,000		Control	
	Agar	Broth	Agar	Broth	Agar	Broth	Agar	Broth
*Immediate	++++	.....	++++	.....	++++	.....	++++	.....
20 hours	++++	++++	++++	++++	++++	++++	++++	++++
44 hours	+++	++++	++++	++++	++++	++++	++++	++++
6 days	++++	++++	++++	++++	++++	++++	++++	++++

parenteral injection, might logically find conditions suitable for development.

NOTATIONS CONCERNING CERTAIN PRESERVATIVES

General practice has given us, as preservatives for serum, tricresol, chinosol and, more recently, merthiolate. Based on the prevalent misconceptions in the rush of recent events, we have attempted brief tests of tricresol, chinosol, merthiolate, glycerin and formalin. Although some discrepancies have arisen as to the manner of using these products, the general recommendations are:

Tricresol.—Final concentration, 0.2 per cent, using for stock solution a mixture of one part tricresol with one part ether.

Chinosol.—Final concentration 1:1,500, using 3.3 c.c. of a 2 per cent aqueous solution of chinosol per 100 c.c. of serum.

Merthiolate.—Final concentration 1:5,000 (also used 1:10,000), using a 1 per cent aqueous solution of merthiolate crystals. This is usually acid, and the crystals will precipitate in a few days, although not in serum. The addition of 1.4 grams of C. P. borax per 100 c.c. of aqueous 1 per cent merthiolate has been recommended.

Glycerin.—Final concentration 1 per cent.

Formalin.—Final concentration 0.2 per cent, based on the use of straight formalin (usually 35 to 40 per cent formaldehyde) neutralized with NaOH when used.

HOW THESE PRESERVATIVES SHOULD BE USED

Regarding the uses of these products, as to general practice and suitability, the following observations may be pertinent:

TABLE 6.—*Subcultures from Serum Inoculated with Staph. aureus, Preserved with Tricresol, Glycerin, and Formalin*

	Tricresol		Glycerin		Formalin		Control	
	Agar	Broth	Agar	Broth	Agar	Broth	Agar	Broth
*Immediate	+++	++++	++++	++++	++	++++	++++	++++
48 hours	++++	++++	++++	++++	++++	—	++++	++++
5 days	++	++++	++++	++++	+	—	++++	++++

Tricresol.—Used for years in standard antisera, but ordinarily added to dialysed serum concentrates from which a major fraction of protein has been removed, and which have been sterilized by filtration. It is thus not relied upon as more than an inhibiting agent for contaminants which presumably do not exist, but might theoretically be present in extremely low concentration.

Chinosol.—Has been used for poliomyelitis serum and others for some years, but very little evidence on its effectiveness seems to be available.

TABLE 7.—*Subcultures from Serum Inoculated with an Unknown Coccus (Found in Human Serum), Preserved with Tricresol, Glycerin, Formalin*

	Tricresol	Glycerin	Formalin	Control
*Immediate	+++	++++	++	++++
48 hours	+++	++++	—	++++
5 days	+++	++++	—	++++

Delayed growth, an indication of attenuation and/or reduction in numbers, was apparent frequently, and does not appear from these tables. It appeared, however, in order of apparent values and concentrations of preservatives.

Although delayed growth indicated more potency than is apparent from final results, the weakness of these substances still probably exceeds general belief, due to the fact that few have considered the question in the light of emergency use.

Broth is more likely to be negative than agar as here tested. These agar tests are, of course, not suited for regular sterility tests, but broth naturally furnishes the best conditions for bacteriostasis. Broth herein received 0.2 c.c. Agar was given only 0.1 c.c., but this was placed on the surface of a hardened plate, *i. e.*, full preservative strength. Quite possibly gradual diffusion of the preservative, leaving the living organisms, accounts for the results, a principle which might find use with further thought.

Serum has been known to spoil with this preservative. It cannot be classed as a good preservative, but there happens to be evidence that it has no appreciable effect on the virus neutralizing properties of poliomyelitis serum.

Merthiolate.—A fair germicide, but unusual in its high inhibiting effect at high dilutions. However, although broth transfers from preserved serum are likely to remain sterile, organisms may be demonstrated in serum preserved with 1:5,000 dilutions after hours or even days.

Glycerin.—Fifty per cent gylcerin finds many uses as a preservative, but a considerable number of organisms grow in media up to 5 per cent glycerin. Although 1 per cent glycerin in serum appears to inhibit somewhat, the action is probably slow for emergency use.

Formalin.—Although used extensively in vaccines, the use of formalin in serum has been avoided because of the effect on antibodies. It has fair preserving qualities, but data seem not to be available for more than a few antibodies, and these contraindicate its use.

COMMENT ON PROCEDURES USED

Tests which were performed locally were not as elaborate as might be desired; but the results lend themselves to logical conclusions, and it is believed that further refinements would be confirmative and would enlarge the scope rather than alter the conclusions. In brief, human serums were preserved with the stated concentrations of five products. To these staphylococci were added in concentrations of one drop of broth culture to 5 c.c. of serum, heavier, to be sure, than might be expected in practice. In order to cover practical conditions with a little more care, B. coli was used also as a test organism, not because it would be a usual contaminant, but because of the wide variation in the action of preservatives against different organisms. Serum was kept in the refrigerator, although some was tested at room temperature as a check of shipping and similar unavoidable clinical conditions.

The serum was tested by the inoculation of 0.1 c.c. to the surface of agar plates, spread with a glass rod, and the inoculation of 0.2 c.c. to 10 c.c. of broth. Attention might well be called at this point to the fact that a slight contamination, e. g., two organisms per c.c., would require the transfer of a fair quantity of serum to detect the contamination—and thus a large amount of preservative also. On the other hand, a heavy contamination, allowing a small transfer of preservative, does not represent working conditions. The proper, but impractical, procedure would thus be to make sterility tests in large flasks of media—representative portions of serum, and high dilutions of preservative. This, in condensed form, explains the difficulties of proper testing for sterility, and, incidentally, explains a large number of favorable tests of germicides which seem satisfactory, but are entirely fallacious. That the tests herein reported are not above criticism on this score is evident. But the use of plates as well as broth consistently demonstrated the presence of living organisms in serum which yielded negative broth tests. Also, the use of more organisms than might be considered practical contamination made possible the use of smaller portions of serum than would usually and properly be used. It must, however, still be stated that positive tests, or growth, under any conditions, condemn, whereas negative tests, or no growth, do not prove sterility.

RESULTS SUMMARIZED

The results may be briefly summarized as follows:

Tricresol.—Both broth and plate tests indicate survival of staphylococci for at least five days, the longest period tested, in serum preserved with 0.2 per cent tricresol. This product clouds the serum, and appears to act with some inhibition, but germicidal action is slow. The antiseptic properties seem sufficiently weak, so that interference with normal sterility tests should not be expected.

Chinosol.—Organisms survived not only in serum diluted 1:1,500 for at least six days, but also at 1:1,000, a recommended germicidal strength. Inhibition was definite, and delayed growth occurred in broth as tested. In short, brief sterility tests might easily yield false negative tubes, indicating sterile serum when it was actually contaminated.

Merthiolate.—At 1:5,000, the strength which has been used at Hooper Foundation, no growth was secured at and after forty-four hours of exposure of organisms to preserved serum kept in the refrigerator, although a few survivors were detected after six days in serum kept at room temperature. This may mean sterility, and certainly indicates some germicidal action as well as complete inhibition. Broth tests were negative, when plate tests were positive. With this substance, broth sterility tests will almost invariably be negative, regardless of whether serum is sterile. In 1:10,000 dilution inhibition was marked, but organisms survived for the longest period tested. Broth tests again were consistently misleading, and have undoubtedly been responsible for a false sense of security on numerous occasions. Although there were several delayed cultures, 1:50,000 merthiolate was at best a weak antiseptic. Apparently, for safe broth sterility tests the ratio of serum (1:5,000 merthiolate) to broth must exceed 1 c.c. of serum to 500 c.c. of broth.

Glycerin.—Although quantitative counts might well indicate some inhibiting effect, or preserving quality, cultures by the method used were consistently positive from tubes preserved with 1 per cent glycerin. Naturally, sterility tests would be accurate with this substance—below 1 per cent it is innocuous.

Formalin.—Formalin at 0.2 per cent not only preserved, but killed most of the staphylococci present in five days. It is a marked inhibiting agent, and broth sterility tests were at times misleading as used. The main objection to formalin thus is not its preserving properties, but the unknown action on the protective value of a serum.

IN CONCLUSION

Thus, of the substances tested, it would appear that merthiolate is the logical substance for emergency use, and even so too much must not be expected of it. Other substances should be used absolutely as preservatives, with complete and adequate sterility tests, not only for a time equal to federal requirements, but by methods which will give actual and not misleading results. Sterility tests with merthiolate are, for the most part, quite valueless. All such broth tests must be made with a high ratio of broth volume to serum, as high or higher than a ratio of 0.02 c.c. of 1:5,000 merthiolate preserved serum per 10 c.c. of broth, and it should be proven that broth with serum will support the growth of a very light inoculation of living organisms.

Third and Parnassus Avenues.

DISCUSSION

K. F. Meyer, Ph. D. (University of California).—The timely report by Doctor Marshall deserves consideration in the light of recent experiences. In a circular letter sent to every physician, under date of June 1, 1934, the director of the State Department of Public Health, Dr. J. D. Dunshee, quoted my statement on the preparation and use of serum in the treatment and prophylaxis of poliomyelitis. "From the standpoint of preventive medicine, it commends itself on account of its simplicity and harmlessness, provided an organization can be perfected to secure an ample supply of properly tested serum. . . . *The collection and preparation of the convalescent sera should be conducted in a central station.*" To this should have been added: "In accordance with the federal standard specified for the production and testing of sera," since it is well known that in Europe a number of fatal accidents followed the use of contaminated sera employed in the prophylaxis against measles. Unfortunately, the advice to centralize the processing of human sera was not followed. Laboratories neither equipped nor staffed with personnel experienced in handling biologics rushed into the work of handling human blood. The consequences are known through the reports in the daily press. A two-year-old boy succumbed to staphylococcal poisoning, following the intramuscular injection of a specimen of human serum contaminated with cocci. The circumstances leading to the contamination are not clear. Since the risk exists, it is obviously advisable to use a germicide which will with certainty destroy the accidental contaminants. Such a preparation is merthiolate in a dilution of 1:5000. In order to prevent the recurrence of accidents similar to that reported from Healdsburg, it will in the future be necessary to delegate the processing of human sera and the handling of biologics to laboratories selected and approved by the State Department of Public Health.

PSITTACOSIS*

By James B. Luckie, M. D.
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Discussion *by George H. Roth, M. D., Los Angeles*

UNDULANT fever and tularemia, when first recognized, were considered rather rare diseases carried to man by animals; but after more careful study it was found that these infections were widely distributed and by no means so uncommon, and had simply been confused with other acute illnesses.

The influenza epidemics, and various other waves of acute illness that affect the respiratory system, have probably acted as a screen to many psittacosis outbreaks, and have served to confuse the diagnosis so that this disease, too, has heretofore been considered a rarity, and has not received the study it deserves along with the other infections borne to man by animals or birds. It is by no means a new disease, as it has been recognized since the outbreak in Switzerland in 1879; and there have been many epidemics of varying proportions in the civilized world since that time, one of the most thoroughly studied outbreaks being that in Paris in 1891. From November, 1929, to May, 1930, the United States Public Health Service had records of seventy-four foci of infection giving rise to 169 cases with thirty-three deaths from psittacosis. These cases were distributed among fifteen states, and were traced to shipments of birds, belonging to the psitticine family, from widely separated tropical countries. At the same time, sporadic cases of the disease were found in practically all parts of the world. Prior to this time, however, it was practically unknown to our country; but since then, perhaps not a single month has passed without a report being made of the disease in the United States.

ETIOLOGY

This disease evidently originated in the parrot or psittacine family of birds, and hence its name. It would be a mistake, however, to believe that the parrot alone is responsible for the spread of the virus. He probably spread it in the first place; but by now a great many of the commercial aviaries, especially in California, are involved, and many of the cage birds, especially the budgerigars, are infected, and evidence points to the fact that practically all of these birds are capable of becoming carriers. The writer has seen two human cases definitely caused by canaries.

In 1892, Nocard,[1] in France, isolated a bacillus from the bone marrow of a dead parrot's wing and called it the Bacillus psittacosis, presumably suspecting that the parrot had died of psittacosis. Several investigators isolated this organism in dead parrots, and two Frenchmen, Gilbert and Fournier,[2] reported having found it in the blood of a patient at autopsy, and from the parrot which had been in this person's care. Others demonstrated that this organism belonged to the Salmonella group, which has a proven pathogenicity for animals, including man, being in the latter a common cause of food poisoning.

During the 1929-1930 epidemic, in the United States, an intensive search was carried on by Branham, McCoy and Armstrong,[3] of the National Institute of Health, for the Nocard bacillus, in the carcasses and droppings of parrots, and the material from human cases shipped them, but no strain of Bacillus psittacosis, or of any other member of the Salmonella group of bacteria was found. Their work has been verified by careful investigators, and the Nocard bacillus is no longer generally considered the causative organism.

McCoy[4] states that between January and March, 1930, eleven cases developed in the Hygienic

* Read before the General Medicine Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

Laboratory, being about 20 per cent of the persons employed in the building, while no cases developed in adjoining buildings. Some of these were only exposed so far as handling cultures of third and fourth generations, and none of these cultures were regarded as causative of the disease in bird or man. Eight others in the laboratory building, who were victims of the disease, had nothing to do with the work on psittacosis, but were merely working in the building as cleaners, night watchman, etc. No good grounds could be established for their infection.

Evidence at present points to a filterable virus being the offending agent. This theory is concurred in by Krumwiede, McCoy and Armstrong, Rivers and Berry, and Meyer in the United States, Bedson, Western and Simpson, and Gordon in England, Elkeles in Germany, Sacquepee and Ferrabouc in France and many other careful workers. The demonstration that the etiologic agent of psittacosis is a filterable virus was quickly followed by the announcement that minute bodies could be seen in suitably stained preparations of virulent human and animal material. The observations were made independently by Levinthal[5] (March 24, 1930), Coles[6] (submitted manuscript, April 3, 1930) and Lillie[7] (submitted manuscript, April 4). The majority of those who have worked with the psittacosis virus (Bedson and Western, Rivers and Berry, Elkeles and Barros, Meyer and Eddie), have seen and studied these elementary rickettsia-like bodies. They appear as round or oval bodies, sometimes in pairs or clusters. The latter arrangement is particularly striking, and is due to their intercellular habitat. In impression preparations or sections, the reticulo-endothelial cells are sometimes filled to the bursting point with these minute bodies. They are, therefore, probably, related to the parasitic bodies found in spotted fever and typhus, which Dr. Roche Lima has named rickettsia bodies, and which are considered forms of the virus of that disease. When present, these L. C. L. bodies (Levinthal, Coles, Lillie), as they are called by K. F. Meyer,[8] or rickettsia psittaci by Lillie, possess the same diagnostic value as the negri bodies in rabies.

The virus psittacosis is in the feces, and in material from nose, mouth and procrop of infected birds, and birds can be infected by intranasal instillations of this material. It is easy, therefore, to understand how this material can be scattered, after it is dried and pulverized by the agitation and flutter of wings in aviaries. Badger,[9] in his report of sickness in twenty-five employees in a department store which sold birds, gave histories typical of psittacosis in seventeen of them, and parrots in other sections of the country that had been obtained from the same source had caused psittacosis. His conclusions point obviously to the fact that psittacosis can be contracted by both direct and indirect contact.

The disease is highly communicable from bird to man, while instances of infection from man to man are supposedly rare; but the writer has had two cases of such transmission in the night- and day-nurse of his first case. They did not approach the birds, which were in the back yard, and one wore a mask all of the time while on duty; yet one developed the typical disease in two weeks, and one in sixteen days. These two, however, may come under the head of "contaminated environments."

Some birds probably develop an immunity to the disease by inhaling minute doses of virus over a long period of time. Rivers'[10] work in experimental psittacosis indicates that parrots and rabbits that have recovered from a primary infection are refractory to reinfection.

In the human, any age is liable, and the disease seems to take a milder course in the young than in the aged. Females seem more susceptible than males, about two to one. This is probably due to the fact that there are two women to every man that handles birds.

While outbreaks appear to be most common in the winter months when other respiratory disorders are commonest, it does not mean that meteoric conditions have much bearing; but it probably means that while bird owners were having their summer vacation, they boarded their birds at aviaries, where they were exposed to the virus and then brought the infection home with them and infected their handlers. There is no record of a racial immunity.

SYMPTOMATOLOGY

The incubation period of the disease is generally considered to be from six to fifteen days after exposure; but some cases have developed after five and six weeks, and others have been reported as late as eighty-two days after exposure. During this period, the patient may occasionally have an anxious, nervous feeling with slight headaches.

Onset.—The symptoms which cause the patient to call for medical aid are fever and severe headache, accompanied by a tight feeling around the chest. The pulse is low in proportion to the temperature. It is not uncommon to find a normal pulse rate with a temperature of 104 degrees, and one patient had a good quality pulse of 90 with a temperature of 106 degrees on the sixth day of his illness. The pulse does not take a decided ascent except in the cases that prove fatal, or in which complications develop.

Respiration is only slightly affected. The temperature continues to show a decidedly irregular course throughout the disease. The tongue may have a grayish-brown heavy coating, accompanied by a bad taste in the mouth. Cough usually is associated with the onset, and is unproductive of sputum, or only slightly so. The small amount of sputum that is raised may be streaked slightly with blood, but it is not dyed with it, as in some other pulmonary diseases or ordinary pneumonia. The blood is usually due to a rupture of small blood vessels in the nose or throat, except in some very severe cases where the lungs show exudation of blood. The cough persists throughout the disease, and sometimes steadily increases in severity.

The appetite suffers at first; but later the patient eats very well. Diarrhea has been reported, but constipation is the general rule, and may reach severe proportions. The abdomen generally be-

comes distended and tender, similar to that found in typhoid the third or fourth day of illness, and remains so from ten to fifteen days.

The headache becomes progressively more severe. It is first of a basilar type, later becomes general and is quite persistent, and in some cases lasts long after convalescence. In a large number of the patients, delirium manifests itself and, like the headache, may become very troublesome.

Physical Findings.—The eyes are bloodshot, but no conjunctivitis or discharge from the lids is found.

The nose and throat show nothing at primary examination, although previous inflammation of these parts may have existed, and this must be kept in mind. Later in the disease they become distinctly reddened.

Herpes labialis may develop in the first few days, as in other febrile cases, but in the writer's experience it indicates a severe course. A papular eruption has appeared on the trunk in some cases, and may be limited to the back. A few rose spots, similar to those in spotted fever and typhoid, are sometimes found around the navel.

The chest must be very carefully examined if the patient is seen early, for the pulmonary changes are hard to detect from the first to the third day. At the onset, the chest shows only a diminution of breath sounds without râles or dullness on percussion; this diminution, as a rule, is found at the left base up to the angle of the scapula, posteriorly. The author's experience has revealed only two cases out of eight with the changes in the right lung. This area should be closely watched, and on the second or third day a very small patch of dry râles may be found on auscultation about in its center. After the third day, the râles spread and quickly ascend to the top of the left side. Why to the left side is not known. The raise of sputum is at no time abundant. There may be a small mass raised occasionally with coughing, which is often blood-streaked but not dyed.

Laboratory Findings.—The blood picture may be practically normal, or leukocytes very slightly above, up to 13,000, or they may count as low as 4,000 with a predominance of polymorphonuclears; the white cells usually drop in number steadily during the disease. There may be a shift to the left in the polymorphonuclears, and in cases showing such a distinct shift the delirium is more marked. Citrated blood taken early in the course of the disease from positive cases may reveal the virus when injected into white mice or rice-birds. Agglutination tests with Bacillus psittacosis and other organisms were found of no diagnostic importance by Branham. Centrifugation of the blood throws down the virus, and L. C. L. bodies may be found on prolonged search in the centrifugate.

Urinalysis, so far, has been diagnostically valueless, giving only the findings usual in febrile conditions.

Sputum may show the usual organisms that are found with routine staining, but nothing specific for the disease, per microscope; but when injected or placed in the nose of laboratory animals it will cause the disease.

Branham studied the feces, but with negative diagnostic results. No work has been done on the stomach contents. Nasal secretions from some of my cases have been examined and injected into animals by Meyer, with negative results.[13]

DIAGNOSIS

History of intimate contact with birds or patients ill with the disease must be obtained in all suspected cases before a diagnosis is possible (excepting laboratory workers employed where psittacosis material is handled, and cases giving positive animal tests). It is not necessary, however, to determine if the birds have been sick, for it must be remembered that birds can infect during the incubation of the disease in them, and that some birds are carriers and appear perfectly well. It is important to determine if any new birds have been brought into the aviary of the sick person, or one visited by him during the preceding six months, and if any of the birds have died during that time. All cage birds should be suspected, and suspicion should not be limited to the psittacine family, for the virus is now widely spread and practically all birds raised in aviculture are susceptible.

Anxiety and slight headache precede the onset by a few days. The onset is marked by severe headache and fever from 99.6 to 104 degrees Fahrenheit. The pulse is low in comparison—60 to 90. Nose-bleed may come on abruptly, and the mind is more or less clouded due to the exhaustion which is quite apparent. Cough may have been present for a time, and is dry and steadily progressive. Sputum is slight and blood-streaked, if there has been nose-bleed. In a little while all of these symptoms have increased, and the headache is the chief concern of the patient.

Physical Findings.—The lungs show no involvement at onset other than a diminution or absence of breath sounds generally at left base, posteriorly. Later, râles appear in this same area and spread rapidly.

Blood should be taken at once, citrated and sent to proper research laboratories, such as the Hooper Foundation, for study and animal inoculation. This also pertains to sputum and urine. These specimens should be repeatedly obtained, for it seems that upon certain days the blood yields negative results. According to Bedson,[11] citrated blood tested on budgerigars and mice contained in some cases the virus on the fourth, seventh, ninth and tenth days of illness; Berry found it to be absent on the third, sixth, seventh, eleventh and thirteenth days, and Gordon failed to detect it on the fourteenth day. The sputum has been found to carry the virus on the third, seventh and tenth days. These may be, however, just chance findings.

Virus is regularly obtained from lung, spleen and liver on postmortem.

In order further to substantiate diagnosis in the human, the birds suspected of transmitting the infection should be chloroformed, packed in ice and immediately shipped to the same laboratory for autopsy and inoculation tests. All material should be very carefully handled, and no attempts

at inoculation should be made, except in the best equipped laboratories, due to the great danger of infection.

DIFFERENTIAL DIAGNOSIS

The disease must be differentiated from typhoid, typhus, Rocky Mountain spotted fever and influenza. Rivers compares it with mild yellow fever without jaundice.

Typhoid.—The history of other cases of typhoid in the vicinity must be considered, then the Widal test made. If Widal is positive, careful investigation should be made concerning the previous use of typhoid vaccine upon the patient, or the history of typhoid infection. In psittacosis, the lung involvement begins almost with onset, whereas in typhoid, if pneumonia develops at all, it is later in the disease. In psittacosis the typhoid-like abdomen develops around the fourth day and lasts about twelve days, and both diseases may have rose spots around the navel, but typhoid more often.

Typhus and Rocky Mountain Fever.—The bite of fleas or lice and ticks should be inquired into, as should the association with birds, for these diseases are quite similar in temperature and pulse curves. Rickettsia bodies have been found in both typhus and Rocky Mountain spotted fever, and they are probably closely related to those in psittacosis. However, pneumonia appears more often and more promptly in psittacosis than in these two infections.

Influenza.—This disease has to be considered, but here the catarrhal symptoms are more marked. The exhaustion is not so great at onset, the cough is productive of sputum, and if pneumonia develops, it is much later in the course of the disease than is the pneumonia of psittacosis. Then the story of close contact with birds, not necessarily sick birds, is quite helpful.

COMPLICATIONS

Bronchopneumonia may occur at any time during the disease and cause serious complications. In a large number of patients there is a perichondrial involvement of the septum of the nose which develops late in the disease. It is possibly due to thrombosis of the delicate vessels over the septum, depriving it of circulation. In some cases this perichondritis has gone on to complete perforation of the septum. Specimens of the scrapings from such an area have been examined by K. F. Meyer, but no signs of the virus have been discovered.

Occasionally a laryngitis sicca develops, and greatly disturbs the patient.

Dysmenorrhea has been seen which lasted throughout the disease.

SEQUELAE

The temperature falls below normal at convalescence and is slow in rising.

Headache and inability to think clearly often persist for a considerable period after the disease.

Phlebitis of the vessels in the lower limbs may develop at any time. The writer has seen one case develop two months after the disease.

Atrophy of the legs, with decided unsteadiness of gait, has been seen by Rivers and the writer. This is quite persistent and more marked than is generally found in other febrile diseases.

TREATMENT

Prophylaxis in general consists in bird owners exercising greater care in their aviaries by keeping the dust laid in and around the aviaries with one of the calcium products sold for this purpose. All loosened feathers and other debris, as far as possible, should be burned, and above all, new birds should not be brought in from other aviaries until quite certain that the source is free from disease. If birds show signs of illness, they should be chloroformed at once and sent to a laboratory for postmortem examination.

Kissing birds, and allowing them to eat from one's dishes or from one's lips, is a vicious practice and should be stopped.

Nurses and physicians should wear masks when with the patient, and rubber gloves when handling the patient or his excretions. Tissue paper for sputum and bags for the same should be burned. Feces and urine should be treated at once with cresol.

The patient should be isolated and his surroundings very quiet, for excitement tends to make the headache and delirium worse.

Diet can and should be full, with the exception of stimulating and irritating foods.

The headache is the chief concern of the patient and requires more or less constant medication. The old familiar migraine formula of phenacetin, acetylsalicylic acid and caffein has worked well with some cases. Narcotics may have to be used, but seldom.

Cough is the next disturbing element, and is a real tax on the therapeutist. The usual syrups used for this purpose are failures, and codein or other mild opiates have to be used. Where laryngitis is a complication, the cough and the laryngitis are both benefited by inhalations of steam with compound tincture of benzoin added to the water.

Unless the fever attains serious proportions, the migrain mixture used for the headache will take care of it nicely. Tepid baths may, however, be necessary to reduce it.

The heart must be watched and cardiazol, caffein or digitalis resorted to when necessary.

There is no specific vaccine or serum for the infection. Convalescent serum has been tried by Adamy[12] and others, but showed no results that could be classed as curative or even beneficial.

The writer, feeling that a positive leukocytic response would be of benefit, used massive doses of leukocytic extract, prepared by the Archibald method, to excite this response. It was useless in small doses; but five cubic centimeters given hypodermically or intramuscularly every four hours, night and day, seemed to influence the disease remarkably. Any vaccine, serum or other agent which irritates the reticulo-endothelial beds, is worthy of a trial. English authors report results with antimeningococcic serum and typhoid vaccine.

A mixture of quinin and camphor in vegetable oil was used intramuscularly, but without appreciable benefit to the pneumonia.

The nose may need care due to the perichondritis that sometimes develops. Use either zinc oxid ointment, in a collapsible tube with nasal tip, or yellow vaselin, and allow it to remain in the nares as long as possible. White vaselin is bleached and is liable to cause irritation if placed in the nose. An antiseptic of a mild nature, like those prepared in water-soluble jellies, can occasionally be used with benefit.

Convalescence has to be very carefully considered, as relapses are common and phlebitis is likely to develop. The patient should live quietly, and without physical exertion or labor, for at least thirty days after the temperature drops, if the case has been a severe one. After this the exercise and labor should be very gradually resumed, and even then a relapse may occur.

Although there may be leg weakness, with atrophy of the leg muscles, massage must be avoided due to the danger from thrombosed vessels.

PROGNOSIS

Certain factors must be considered in the prognosis of this disease and one of these is age. In the 675 cases reviewed, the age incidence was as follows:

Age susceptibility	Death Rate
1 to 10—approximately 1.5 per cent	Low
10 to 20—approximately 5 per cent	Low
30 to 50—approximately 60 per cent	50 per cent
50 to 60—approximately 15 per cent	50 per cent

Although the death rate was unobtainable in the above cases under thirty years of age, the younger patients are considered as having much better chances of recovery than those above thirty years. The death rate throughout the world approximates 40 per cent for all ages; in California, 20 per cent, or 9 out of 43 cases, of which 13 were males and 30 females.

Functionally, the surviving patients ultimately become normal, but some have an atrophy of the leg muscles with weakness, while others have a clouded mentality for some time.†

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† See, also, article in this issue on "Psittacosis in Germany and Holland in 1934," page 131.

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NOTE.—The newspapers of April 28, 1934, announced that Rivers of the Rockefeller Institute had succeeded in preparing an immunizing vaccine from filterable virus of psittacosis, and had injected some workers at the institute. No definite information is as yet obtainable on the subject.

DISCUSSION

GEORGE H. ROTH, M. D. (Director, Bureau of Communicable Disease Control, Los Angeles County Health Department, Los Angeles).—On December 5, 1929, the Lassco steamship "City of Los Angeles," with a number of passengers who had acquired Rio de Janeiro parrots while on a South American cruise, docked in Los Angeles Harbor.

On December 8, a member of the crew presented his parents in Alhambra with one of these parrots, which died in a few days. Both parents subsequently developed psittacosis, which proved fatal to the mother.

A customs officer at the harbor, through his association with the parrots, contracted psittacosis and died.

A member of a very prominent family in Los Angeles, who was a passenger on the steamship, purchased a parrot in Rio de Janeiro, and proceeded on to Honolulu, where she died from psittacosis.

This was our first recorded outbreak of psittacosis in California—six cases, with three deaths.

On January 17, 1930, we went to the "City of Los Angeles" dock at Wilmington harbor, and procured the passenger list of those that disembarked with Rio parrots. On this list were people from Los Angeles, Beverly Hills, Pasadena, Alhambra, Los Angeles County and several eastern cities. These were all followed up and several suspects located. There were several instances in which a parrot died, and shortly after "influenza or pneumonia" developed in members of the household. In one case a priest who had taken the cruise brought a Rio parrot to his home in Toledo and gave it to his housekeeper. Subsequently the parrot died from "too drastic a change in climate," the father assured me. Two weeks later the housekeeper died of "pneumonia."

On January 25, 1930, the Surgeon-General issued orders for "Exclusion of all parrots, and suitable detention of all parrots on board any ship arriving from a foreign port." We have had *no* further outbreaks of psittacosis from parrots.

Outbreaks from Parrakeets.—We cannot, however, say so much for the parrakeets. Southern California climate proved unusually favorable for their propagation, so within a short time a large and thriving industry developed, the greatest concentration (60 per cent) being in Los Angeles County. Love-birds were not only freely dispensed locally, but interstate trade was engaged in to a considerable extent and with some very disastrous results.

In the fall of 1931 an itinerant vendor purchased a number of love-birds from two of the large aviaries in Los Angeles, and headed north over the Ridge Route and up through the Central valleys, leaving a trail of psittacosis and death in his wake in five counties—ten cases and five deaths.

Another vendor from San Francisco was responsible for four cases with one death in three counties. There were cases in Bell, Huntington Park, Pasadena and the city of Los Angeles traceable to local parrakeets. Thus, foci of infection were proven in Southern California, particularly in Los Angeles County and also in San Francisco; but these were presumed to be from imported parrakeets, so on February 13, 1932, the California State Department of Public Health issued an order prohibiting importation of all psittacine birds for a period of six months.

The development of all these cases caused an extensive epidemiological investigation to be made, and in the course of studies on human cases it was determined by laboratory tests that psittacosis had become endemic in California aviaries. All infected aviaries were, of course, quarantined. Repeated efforts of the

State Department of Public Health to effect regulatory measures to stop the spread of this disease were met with such strenuous opposition from a majority of the aviary owners, many of whom do not recognize the existence of psittacosis, that little could be accomplished in the way of control measures.

Up to this time—October, 1932—there were fifty-four cases with ten deaths in this state, and outbreaks in eight other states as follows, all traced to California parrakeets:

New York, November, 1931	3 cases	1 death
Oregon, November, 1931	2 cases (5 suspects)	2 deaths
Illinois, July, 1932	3 cases	1 death
Michigan, August, 1932	1 case	1 death
Minnesota, September, 1932	12 cases	1 death
Massachusetts, October, 1932	2 cases	1 death
Wisconsin, October, 1932	9 cases	0 deaths
Idaho, October, 1932	1 case	recovered

—and that one case happened to be the wife of United States Senator Borah.

Then things began to happen in Washington. The Surgeon-General issued an order prohibiting the interstate transportation by common carrier of birds of the parrot family, and provided that they could be released for interstate shipment only after being certified by the State Department of Public Health. Very few could be certified and a quarantine was placed on all others; consequently most of the traffic in parrakeets ceased.

As the industry was practically tied up under federal and state regulations, the aviary owners assumed a more coöperative attitude, and definite regulatory measures were instituted.

Breeders were required to maintain at least three pens separated by a distance of five feet. The first pen was maintained for breeding purposes only; the second for maturing the birds to the age of seven months, at which time they were given a leg-band on which was stamped the registration number and code number of the owner, and placed in the third isolation pen for a period of thirty days. At the end of this period, the birds were inspected and a certificate of health given for their release. This procedure seemed very effective as there were no cases of human psittacosis from October, 1932, when the lid was clamped down to February, 1933.

Suddenly, however, in the spring of 1933 there occurred five cases in Los Angeles County in rapid succession, four of which were fatal, all traceable to different sources of infection. Later in the year psittacosis outbreaks occurred in Maine, Connecticut and Hawaii. However, it can be said to the credit of the California health authorities, that all cases occurring outside of California during 1933 appear to have been contracted from birds that were shipped from California in violation of regulations of the State Department of Public Health. As a direct result of these irregularities which resulted in an order from the Acting Secretary of the Treasury of the United States, the California State Board of Health on February 10, 1934, ruled that in the future "no shipping certificates will be issued without a report from a laboratory duly designated for that purpose showing that 10 per cent of the shell parrakeets have been examined by autopsy and laboratory tests on mice and found to be free from psittacosis infection, and further that no bird under eight months of age be offered or accepted." A branch of the State Laboratory was immediately established in Los Angeles and work was begun.

In the latter part of March of this year, the Pittsburgh outbreak of over twenty-five cases with eleven deaths occurred which was charged to California parrakeets. This, of course, demanded drastic action; so on April 2, the director of the State Department of Public Health issued an order to the effect that shipping permits both for interstate and intrastate movement of parrakeets be discontinued.

Thus we see the lid has again been clamped down tight, and we have reason to believe it will remain so until such time as state and federal authorities complete control measures for adequate protection of public health.

The previous procedure, based on a system of segregation and inspection, while helpful, was inadequate as evidenced by the continuance of cases here and in other states. The recent plan of February 10, 1934, which provided for a 10 per cent laboratory test of all aviaries before certification, was regarded as insufficient. Therefore, a more stringent procedure with additional safeguards was formulated and adopted on April 24. This plan provides for a 10 per cent double laboratory check of aviaries before breeding is permitted. Then the young birds are put in separate pens and, when eight months old, are subjected to a 10 per cent laboratory test and, if found free from infection, are banded, coded and released. Affidavits have to be signed by the aviary owners to follow outlined procedure. All shipments have to be counted, and code numbers checked and many other details carried out. The program seems promising, provided sufficient personnel can be secured for its rigid enforcement. If not, there would seem to be but one alternative and that is complete extermination of psittacine birds, and disinfection of premises and equipment.

Then, if the public still demands parrakeets, let the breeders start anew with clean stock. Many public health authorities believe the latter method would be cheaper and better in the long run. We all know how hoof and mouth disease was eradicated from the dairy herds of California. The psittacosis problem seems comparable. This procedure was strongly advocated by our most eminent authorities over two years ago and, had it been followed, the industry would now be restored, and there would have been a saving of many human lives.

PLAGUE*

By W. H. Kellogg, M. D.
Berkeley

Discussion *by K. F. Meyer, Ph.D., San Francisco*

THE history of plague as one of the five great epidemic diseases is too well known to require more than passing reference. The black death of the Middle Ages, responsible as it was for probably 25,000,000 deaths in a single century; the plague of Florence, for knowledge of which many are indebted to the Decameron of Boccacio; and the great plague of London are interesting historically, and as chapters in the history of medicine, but it is not epidemics of this kind that we fear at the present time.

Our very thorough knowledge of the cause and mode of spread of this disease insures us against such devastating outbreaks as the 1663-65 plague of London; although the cost of controlling epidemics once they are started runs into the millions for any given community, as two of our California cities know to their sorrow. Probably the traditional ounce of prevention looms larger in importance in this disease than in most any other, for its control depends, not on individual effort as in smallpox, but on community measures. These measures are not the usual ones of general sanitation of the environment, which are so effective in controlling cholera, typhoid and yellow fever; but

* From the State Hygienic Laboratory, Berkeley.

* Read before the General Medicine Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

they require a specialized form of sanitation not invoked except for plague, and which is very expensive in its application. The outstanding epidemiological characteristic of plague, and one which it is well to remember, is its habit of recurring in epidemic form at intervals which are unusually long, measured in decades, even centuries. After these long periods of quiescence, during which it lies dormant in some endemic wild rodent focus, it takes on, for unknown reasons, renewed activity, spreads to the rat population of nearby communities, and thus is off on another world-wide pilgrimage, or pandemic. The pandemic spread can doubtless be ascribed principally to the traveling propensities of the rat, but not altogether. In other diseases, not spread by rats, we see the same pandemic tendencies.

APPEARANCE OF PLAGUE IN AMERICA

We are now in the midst of a pandemic of plague which began about 1894 in China, and which has wreaked its greatest havoc in India, where the deaths in 1903, 1904 and 1905 reached nearly a million a year. Until the present outbreak, plague had been absent from Europe for 200 years, and it had never visited the Americas: but in 1900 it reached San Francisco, and, at about the same time, Santos, Brazil. I was bacteriologist for the Board of Health of San Francisco at the time, and it was my fortune, or misfortune as it seemed for some time thereafter, to discover the first case in the person of a Chinese, who died of some mysterious disease after a very brief illness. My report to the board precipitated a chapter of medico-political events that almost pass the bounds of credibility. The story of the experience of San Francisco and its Board of Health in this, the first epidemic of plague in the western world, has been told elsewhere,[1] and I can only refer to it briefly at this time. It was a remarkable chapter, involving as it did a struggle between a conscientious board of medical men of the highest type against the malign attack of all the influences that feared undesirable publicity for the City of San Francisco; that feared loss of business, or had political reasons of various kinds, and of individuals, some of them in the medical profession, who yearned for publicity. These influences were successful, in the general ignorance of the disease, both lay and professional, in securing the partisanship of supervisors (but not the Mayor), of many members of the medical profession, including some prominent in medical educational circles, of judges of municipal and of federal courts, of legislators, including the Governor of the state, who was particularly active and bitter in the campaign against the local Board of Health. The activities of this opposition extended even to federal officials of note—the Surgeon General, and the Secretary of State, and they even enlisted the aid of the President himself. But we lived through it all, the Board held steadfast. The number of deaths in this first epidemic totaled 113.

1 Kellogg, W. H., Present Status of Plague with Historical Review, Amer. Jour. Pub. Health, Nov. 1920.

RÔLE OF THE RODENT IN PLAGUE

Plague has apparently established a permanent endemic focus among the ground squirrels of California, the menace of which, to be appreciated, requires a brief consideration of the habits of plague. The plague bacillus belongs to the hemorrhagic septicemia group, most of the members of which are pathogenic for the lower animals only. Plague, or bubonic plague as it is generally called, is primarily a disease of rodents, and only secondarily a disease of man. During interepidemic periods it lies dormant in low grade infections prevailing among wild rodents in certain localities which hitherto have been confined to Asia. From these foci it spreads, when the time is ripe, to that ubiquitous domestic rodent, the rat, and so to man. The means of spread from rat to rat, and from rat to man, but not from man to man, is the flea, which, gorged with blood teeming with bacilli taken up during the terminal septicemia of a dying rat, deserts its host with the onset of the chill of death and seeks a new host. It matters not to ceratophyllus or cheopis if the first available prospect is a human instead of a rat. In the meantime the plague bacilli are packing his proventriculus so that with attempts to feed again, a regurgitation occurs and virulent plague bacilli are deposited on the skin in the vicinity of the atrium of the bite, ready to be rubbed in with scratching. Plague bacilli do not infect the flea, but they may remain alive in his interior for as long as seventy days.

BUBONIC PLAGUE

Plague in man contracted in this way results in the bubonic form characterized by the development of the bubo, extremely painful, especially to touch. The bubo, usually only one, is more often than not in the groin below Poupart's ligament. The group of glands at the saphenous opening seems particularly likely to be involved, and there is no evidence that this is due to inoculation of the extremity. The buboes do not go on to suppuration excepting in cases that end in recovery. When death occurs it is usually within three or four days, or perhaps a week, and at postmortem the bubo is seen to consist of swollen lymph glands matted together with an abundant edema and hemorrhage. Section through the mass shows the cut surface of the individual glands to present, because of hemorrhage and necrosis, a purplish mottled appearance. The glandular involvement that is so characteristic of the disease is not always in the form of a visible bubo, but may be concealed in the abdomen, or elsewhere.

The definite diagnosis is made by puncture of the bubo of a suspected case with a small needle and syringe (the hypodermic is too small), the bloody fluid aspirated being smeared on a glass slide for microscopic examination, planted on culture media, and inoculated into guinea pigs. (The State Laboratory at Berkeley should be notified immediately of any suspected cases.) A case of plague of the bubonic type is not contagious in the ordinary sense, and not much of a danger to associates, at least in average white populations, for the reason that, even though fleas abound, a

septicemia is not common and the transfer of fleas from person to person is relatively infrequent. The flea to be feared is the rat flea which has been forced to seek a new host. Quarantine of persons, therefore, is unnecessary, but hospitalization of cases, and the destruction of rats and insects in the house where the infection occurred is necessary.

PNEUMONIC PLAGUE

Pneumonic plague is another matter altogether. Although caused by the same bacillus and having its primary origin in rodents, it is so different clinically and epidemiologically as to be, to all intents and purposes, another disease. Sometimes, in the course of an attack of bubonic plague, particularly when the lymph glands involved are in the neck or axilla, a secondary pneumonia caused by the plague bacillus develops. Isolated cases of this kind occur in bubonic outbreaks, but do not ordinarily lead to a spread from person to person of the pneumonic form. There are, however, circumstances which determine the development of an organ virulence on the part of the prevailing strain and then a pneumonic epidemic is imminent. The determining influences are little understood, but it seems likely that the rodent origin and, also, climatic factors play their part. Plague in ground squirrels and similar species, such as the tarbagan of Manchuria, frequently affects the lungs of these animals but rarely does so in rats. Guinea-pigs inoculated from plague-infected rats do not show pneumonia, but they frequently do when inoculated from ground squirrels, showing a difference in the strains. The pneumonic plague outbreaks that occurred in Manchuria in 1910-11 are said to have originated among trappers of the tarbagan, the animal that maintains the permanent focus in that country. In California, plague reached the ground squirrel population soon after its first appearance in San Francisco, the contact between rat and squirrel probably taking place in the vicinity of the Port Costa warehouses.

In Oakland in 1919 there occurred an outbreak of pneumonic plague originating in a case of plague pneumonia that was secondary to an axillary bubo, the man having been squirrel hunting immediately before the onset of his illness. A total of thirteen cases occurred in rapid succession, including two physicians and two nurses, and resulting fatally in all except one. The reason for the limitation of spread in this small group is not clear, but it may be that prompt hospitalization of all cases had something to do with it.

A similar outbreak occurred in Los Angeles in October, 1924, with a total of thirty-two cases, all fatal except two. This series began in a house occupied by ten people in the Mexican quarter. Nine of these died, as did sixteen relatives and friends who visited the house during the illness of the first patient. Other contacts to develop the disease and die were a nurse, a priest and an ambulance attendant. The quarter was placed in quarantine, and patients sent to the county hospital where a plague ward was established and every precaution taken to protect attendants. Mysteriously, as with the Oakland epidemic, new cases suddenly ceased.

Perhaps, in this connection, the observations of Teague and Barbour in Manchuria offer a clue. These observers noted that the most obvious difference in conditions between Manchuria, where fifty thousand deaths from pneumonic plague occurred, and India, where, among hundreds of thousands, all were of the bubonic type excepting about 2 per cent, and no epidemic prevalence of the pneumonic type ever occurred, was one of temperature. In Manchuria, during the epidemic the temperature was in the neighborhood of 30 degrees below zero, centigrade, and in India 30 degrees above. Teague and Barbour carried out animal experiments which showed that the plague bacilli contained in fine droplets of pneumonic sputum would die from drying in a few minutes unless they were suspended in an atmosphere with an extremely small water deficit. Such an atmosphere is common in cold climates and uncommon in warm ones. If this is the explanation, we in California may extract such degree of comfort from it as is possible in face of the fact that we have at our doors one of the world's permanent foci of rodent plague. As to the inhabitants of our eastern states, the outlook is little, if any, more hopeful, for it is easily possible for a person in the incubation period to journey to New York or Chicago in the winter where he would find the Manchurian conditions to perfection. Should he then develop a plague pneumonia, the consequences would be terrible to contemplate.

DIFFERENTIAL DIAGNOSIS

Physicians in California should be on the watch for possible cases of plague. The bubonic form, when not suspected, is likely to be mistaken for typhoid or some pyogenic infection. An acute solitary bubo, tender, but with little or no external inflammatory appearance (on the contrary the skin frequently has a blanched look) is suspicious. The most recent case of plague in California was in the person of a storekeeper in the town of Whittier, who died with a femoral bubo on one side only last August. No source for his infection was ever traced. Pneumonic plague cases are not markedly different clinically from other pneumonias. The onset is abrupt and prodromes are rare. Chilly sensations are complained of, but a rigor is not common. The patient has headache, fever, anorexia, and an increased pulse rate. Within 24 to 36 hours the temperature goes to 103 or 104 degrees, and cough with dyspnea develops in the same time. The expectoration is at first scanty and consists of mucus which soon becomes blood tinged. Later it becomes thinner and of a bright red color. Plague bacilli are numerous in the sputum at this stage. The typical rusty sputum of croupous pneumonia is not observed. The course of the disease is short and the mortality almost one hundred per cent. In its pathology it is a wet lobular pneumonia resembling very much the pneumonia seen accompanying epidemic influenza, with which disease the first few cases are almost sure to be confused. The cut surface of the lung shows lobules of consolidation well circumscribed, of a bluish red appearance, the tissue immediately surrounding being edematous and exuding large

amounts of thin red nonpurulent fluid. In patients that live a little longer, the areas have a characteristic rose gray color, are finely granular, and are characterized by the absence of fibrin. The areas of consolidation vary from 1 to 6 centimeters, coalescing in older processes into pseudo-lobar areas, the borders of the original lobulation still being faintly discernible. In Manchuria, it was a common observation that death occurred from an overwhelming septicemia before consolidation developed, the lung showing only an inflammatory engorgement. Under favorable atmospheric conditions, pneumonic plague is the most highly infectious and most rapidly fatal, as well as the most certainly fatal of all epidemic diseases. One should not knowingly risk a moment's exposure without the protection of a mask, and a plague mask is not the light gauze affair of the operating room, or of the public hysteria of an influenza pandemic. Such masks may be a protection to the field of operation against the comparatively inocuous pyogenic organisms that may be sprayed by the mouth of the surgeon, but they are worthless against plague and influenza. A properly constructed plague mask, as proven out in Manchuria, is made of a closely woven cloth and covers the entire head with a glass or mica window for vision.

SUMMARY

I have made this general discussion of plague as short as possible, including only the barest essentials of the epidemiology, in preparation for the final summary of the plague situation which is as follows:

Plague is now present in many parts of the world, it having become pandemic in the nineties of the last century. The last reports of prevalence in the United States Public Health Reports show plague present in British East Africa, Ceylon, Manchuria, four provinces of China, Dutch East Indies, Ecuador, Egypt, India, Indo-China, Iraq, Libya, Union of South Africa, Argentina, Bolivia, Madagascar, Peru and Senegal. Plague infected rats are being found in Hawaii. In India, the cases are running continuously at the rate of three to five thousand per week. Whether or not the pandemic is subsiding or only following the usual history of this disease which is to smolder along for twenty or thirty years or even for a century, then suddenly start on the upgrade again, no one can say. The certainties we have before us are that the disease is enzoötic in California, and that until governmental measures of extermination of the ground squirrels are prosecuted with the end in view of plague eradication, and not merely relief from the destruction of field crops, we have an ever present menace in our midst. The particular danger is to the people of eastern states rather than of the Pacific Coast, for the reason that pneumonic plague probably will not prevail extensively in the climate of California, but it is a very real menace in the climatic setting of the eastern seaboard in winter, to which locality it is easily possible for an incubationary carrier to travel. The State Board of Health is doing all that is possible to be done with the limited funds at its disposal. The real responsibility, however, would appear to be with the national government, since the danger is to the entire country.

Practicing physicians can have little part in the prevention of plague or, indeed, in curing cases, for vaccines and serums, while obtainable, are not of a high order of potency. Physicians should be able, however, to be of the utmost help in molding public opinion for the support of public preventive measures, and in advising people as to the danger of handling ground squirrels, and of exposing themselves to the possibility of picking up fleas in the neighborhood of squirrel burrows. Physicians should also, it goes without saying, be on the alert for sporadic cases of plague, and should not forget the possibility of plague when considering the diagnosis of influenzal pneumonia.

State Hygienic Laboratory.

DISCUSSION

K. F. Meyer, Ph. D. (Hooper Foundation for Medical Research, San Francisco*).—In order to discuss the various subjects here presented, I prepared a table in which the principal transmission chains are illustrated by concrete examples on certain known or incompletely studied diseases of animals and man. The first part of the tabulation deals with the infectious diseases which may be conveyed from a warm-blooded animal, either by the percutaneous, the alimentary or the permucosal routes to man. The name of the disease is followed by the species of animals which serves as the principal "reservoir" or "spender" of the respective infective agent. This grouping, although it makes no claim for completeness, comprises most of the known infections, but not the parasitic diseases which are generally described under the name of "zoönoses." In order to avoid any unnecessary confusion, the listing of the bacterial invader or virus is omitted. The special discussion will compensate for this incompleteness. Since this group comprises infections that are exceedingly variable with respect to their localization, portal of entry, mode of transmission, biologic characteristics of their disease incitants, etc., it is naturally impossible to give general criteria. However, the following features are worth recording: (*a*) The majority of the microörganisms, or viruses, responsible for the diseases possess broad "infection spectra." In other words, they are capable of infecting in nature a great many animal species, as well as experimentally established hosts. For example, spontaneous anthrax has been observed in man, horse, ox, sheep, pig, goat, buffalo, camel, wild game animals and carnivora in zoölogical gardens; also in the hare, dog, cat, guinea-pig, chicken, duck, goose and ostrich. Experimentally the bacillus is transmissible to mice, rabbits, guinea-pigs, rats, marmots, dormice, pigeons and occasionally to frogs, seahorses, etc. In this connection, one also recalls that in nature rabies is confined to a comparatively small number of species (dogs, cats, coyotes, foxes, wolves, jackals, horses, cattle, pigs, deer and moose), but artificial transmission is possible among a wide range of animals. In fact, it may be assumed that no mammal nor even bird is insusceptible.

(*b*) The chains, as a rule, are broken following the first transmission to man. No spread of the infection results from the exposure of a susceptible animal or man to the human being who contracted the zoönosis. In a few diseases, a restricted mode of natural transmission—percutaneous introduction of the virus through a bite wound, as in rabies or rat-bite fever—is in part responsible for this behavior. On the other

* Dr. Karl Meyer's discussion took into consideration the other papers in a symposium on "Animal-Borne Diseases," which were read before the Section on General Medicine at the annual session held at Riverside.

hand, the causative organism must maintain itself through continuous passage in the animal host. A change of host, as for example, a transfer to man, will sooner or later lead to a blind ending of the chain. In this general formulation, the statement, that the passages are ultimately broken, applies without restrictions to the entire group.

(*c*) In a few of the infections, the clinical and anatomical character of the disease in man is identical with that of the animals. A change of host does not alter the principal diagnostic signs. Some authors have pointed out that the infections due to the Bang's bacillus present a noteworthy exception. In man, it manifests itself as a septic fever, while in cattle as a localized process in the genital tract or udder. It is not unlikely that these differences are only relative. Very little is known concerning the early clinical course of a Brucella abortus infection in cows. According to Thomsen, cattle, and according to van der Hoeden, horses infected with the Bang's bacillus may have fever of an undulating type. The comparative clinical study of the entire group deserves further detailed scrutiny before generalizations are in order.

The second part considers the transmission by an animal of a low organization, in variably poikilothermic, either a flying insect or a nonflying arthropod such as a tick, flea or mite. The disease incitant localizes and multiplies in the poikilothermic host. All the latter are not merely "vectors or transmitters," since it is well known that only certain species of insects, ticks or mites are capable of conveying the disease germ. Between the causative agent of an infection and the poikilothermic host a specific mutual relationship is thus established, and the word "vector" is merely retained for the sake of convenience in order to avoid lengthy circumscriptions.

The infection chains of this nature reveal a well regulated alternating organization. Man and insect continuously interchange their position. The infection is, with two exceptions, never transmitted from man to man, nor is it spread from insect to insect. As a rule, the transmission: man-insect-man-insect frequently induces, with the alteration in the host, a change in the life-cycle of the parasite. To be sure, the details for such a life-cycle are only known for the malarial parasites, and it remains for future investigators to determine the existence of similar conditions for the trypanosomes, the rickettsias, the viruses, etc. The size of the parasite, and the lack of proper morphologic differentiation, may offer unsurmountable difficulties in this direction. One is justified, therefore, in assuming a transition in the life-cycle, only provided the experiment indicates that the transmitting insect is unable to convey the infection immediately after the intake of the disease producing agent. If, however, a few days elapse and if the "ripening process" is controlled by the temperature and the humidity of the environment, and infection is conveyed, it is then most likely that the parasite has undergone not merely a process of migration (from the digestive tube to the salivary or other glands), but a considerable multiplication. Evidence along these lines has not only been forthcoming for the microscopic, but also for the ultramicroscopic disease incitants. However, it is impossible, with the exception of malaria and trypanosoma, to prove that the exogenous multiplication (that is, in the insect) differs quantitatively from the endogenous development in man. Doubtless, the continuous change between vastly different hosts must be accompanied by profound alterations in the biologic activities of the parasites. These are indicated by special sexual phases in the life-cycle, and by organotropic properties which differ vastly from those observed in man or animals. This behavior is, to a certain extent, self-explanatory, but not readily comprehended is the observation that the *insector vector is very slightly, if at all, affected by the infection.* The life span is neither shortened, nor is the nutrition, reproduction or locomotion impaired despite the extensive changes which the parasite may produce in the digestive tube or in the sex organs (spirochaetes in ornithodorus). For the preservation of the parasite, this behavior is of the greatest importance. Should the vector succumb to the infection, or should the desire to suck blood disappear, then the transmission to man would cease and the chain would be regularly broken in the insect. In due time, the disease would become rarer and finally disappear entirely.

A study of subgroup 3 to 5 reveals further that the disease incitants are not only infectious for man, but can be inoculated experimentally into various species of mammals. One must, therefore, consider the possibility that in the natural transmission chains, man may be substituted by other homeothermic hosts. Or in other words, animals may serve as "virus reservoirs" from which the vector may draw the infective agent, and then transfer it to man. The existence of these conditions is of the greatest consequence for the epidemiology and control of certain disease entities.

In order to analyze these possibilities, it is necessary to determine (*a*) that the respective infection occurs spontaneously in higher animals, since not every experimentally proven host is also a natural host; (*b*) that a transmitter exists which sucks blood from man as well as from the suspected animal species; and (*c*) that epidemiologic observations conclusively prove the transfer of the disease from the animal to man through the agency of the hematophagous vector. If one sifts the available results of research from these points of view, one may find the following examples:

1. In dengue fever, yellow fever, sand-fly fever, African sleeping-sickness, five-day fever, Carrion's disease or verruca peruana, only one homeothermic natural host, man, is known. There are inconclusive reports available which would indicate trypanosomes in many respects to be similar to the trypanosoma gambiense occurring in sheep, goats, antelopes and crocodiles; but their relationship to human sleeping-sickness is by no means clear.

2. Animal reservoirs have doubtless been established for the relapsing fever "spirochaete" in burrowing rodents, and even in larger animals. Their epidemiologic importance is considerable and deserves detailed investigations. By no means explained or evaluated are the findings of the malarial parasite in anthropoid apes, the schizotrypanum cruzi in monkeys, opossums, cats and armadillos, or the presence of the tsutsugamushi rickettsia in mice.

3. The reservoirs in different mammals, as important virus sources for the transmitting arthropod, are proven for the following diseases:

Rocky Mountain Spotted Fever.—Dermacentor venustus as common vector; wild rodents serve as reservoirs.

Tularemia.—Dermacentor venustus, chrysops discalis (fly). Animal reservoirs: wild rabbits, squirrels, water rats, wild rats, woodchuck, lemming, field mice, etc.

Plague.—Various species of fleas, in particular Xenopsylla cheopis. Reservoirs: rats, squirrels and tarabagans.

Probably the leishmanioses could be classed in this group, but the final word has not been spoken concerning the transmitting insect, whether it be a Phlebotomus or another arthropod.

In every respect, it is a noteworthy fact that the infections just mentioned make their appearance in man only when their distribution in the animal reservoir assumes epidemic proportions. The remarkable, and well regulated dependence of bubonic plague on the simultaneous or preceding high mortality of rats from spontaneous plague is a well known epidemiologic fact. The causative bacteria exist and multiply principally in the mammalian hosts, and man acquires the disease merely by accident. In this respect, the maladies resemble those of the first group; with the difference, however, that the transmission from animal to animal, and the transfer from animal to man is never direct, but dependent on the poikilothermic blood-sucking vector. Yet, this rule is not applicable to tularemia and plague.

Authentic observations leave no doubt that plague may be transmitted from rat to rat, or in the form of

pneumonic plague from man to man, without the intervention of the flea. The contact transmissions of tularemia from rabbits to man, through the crushing of ticks or handling of cultures, are well known. It may not be mere coincidence that these two maladies are the only insect-borne infections caused by disease incitants which definitely belong to the bacteria. The microörganisms are very closely related, and it is the bacterial character of the disease incitant which finally controls the highly contagious character of tularemia and plague. To this, one may further add the fact that no particular portal of entry is required for the penetration of the bacteria. They invariably produce a septicemic penetration of the tissue of the host leading to a liberal elimination of the microörganisms in the pathologic discharges.

SARCOMA OF THE TESTICLE

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TUMORS of the testicle are rare when compared to new-growths in other parts of the body. Morris [1] states that less than 3 per cent of malignant growths involve the testicle. Young [2] gives figures from the Brady Urological Institute, where there were twenty-five tumors of the testicle in twelve thousand urological cases (0.2 per cent). The incidence of occurrence is given [3,4,5] as one in two thousand male admissions.

Tanner [5] states that six hundred cases had been reported in 1922. Sarcoma is by far the rarest; in fact there has been, and is, considerable disagreement as to the diagnosis of sarcoma of the testicle. Bell [6] believes many have been, and are still wrongly diagnosed. All of the cases formerly reported are not accepted. Under the newer classification many of the former cases of sarcoma fall into the seminoma group. Cairns [7] states that lymphosarcoma is the only one of this group which has not been proved of teratomatous origin; he had encountered three cases. Thus, while recent figures give the incidence of sarcoma testis as 0.4 to 1 per cent, we find a series of sixty-one cases by Coley [10] in 1915 in which the incidence was 77 per cent, and Kober's [11] series of 114 sarcoma cases in 1899. In contrast to this, Kelly [9] quotes Rubaschow as finding only twenty-four cases in the literature (1926); Hinman,[12] twenty-two cases with no sarcoma; Higgins,[13] twenty-three cases with four sarcoma, two of these diagnosed only clinically; O'Crowley and Martland,[14] two cases of lymphosarcoma in a series of thirteen; and Tanner, one hundred cases with no sarcoma; they are not included in his classification of testicular malignancies.[5]

Neoplasms of the testicle may occur at any age from less than one to eighty years. Sarcoma may occur at any age, the average being thirty-five years. Dew [15] reports one case, a man of eighty-four, with rapidly growing sarcoma of both testes, probably metastatic. One case in Kober's series was eighty-one; 14 per cent were over fifty. In Tanner's series, 12 per cent were over fifty.[5]

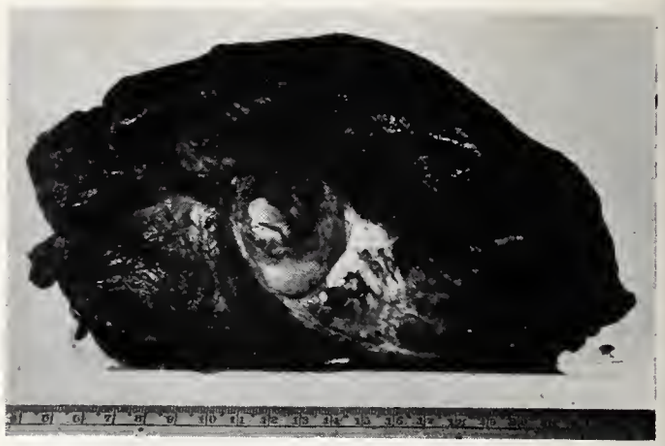

Fig. 1.—Tumor removed at operation.

While rare in occurrence, testicular malignancies carry a high mortality. Most patients have metastasis, not always demonstrable, when examined. In Higgins' [13] series the average lapse of time between appearance of tumor and examination was ten months. The tendency to spread by the vascular system is marked. Simons [19] states that a few—the genuine sarcomata—spread only by the vascular system. Those cases still alive four years after treatment are few, regardless of the type of malignancy. The average mortality given is 80 to 95 per cent, the sarcoma cases being in the high mortality group.

Two opinions are expressed regarding methods of treatment. Coley advocates simple removal of the tumor and administration of bacterial toxins. Tanner believes that a radical operation with removal of the lumbar lymphatic gland is more beneficial than simple castration followed by radiation or toxins. The operative mortality is 10 to 20 per cent. Hinman [17] reports five consecutive radical operations without operative mortality. Hinman, Higgins, Keyes [16] and Peirson [18] recommend surgery with radiation preceding or following the operation. Some recommend the x-ray both before and after surgery. It would seem that any operation, radical or simple, would be inadequate. It is a physical impossibility to remove all of the lumbar lymphatic tissue. Surgery will not reach the hematogenous metastasis. Surgical treatment of sarcoma in any part is very unsatisfactory except when seen early. With recent development in high voltage therapy, greater accomplishments should be expected from simple surgery supplemented by radiation.

REPORT OF CASES

Case 1.—C. L., an Indian male of eighty-three, was admitted to the Riverside County Hospital, November 9, 1932. He complained of a growth in the left side of the scrotum, first appearing three years previously and increasing steadily in size. Further history was unsatisfactory. Examination showed a large, well-nourished Indian male. Teeth had all been removed. Heart and lungs were fairly normal. Blood pressure was 190/100. There were no abdominal masses. There was a solid tumor mass in the scrotum approximately eight inches in diameter, irregular in outline and not tender; the skin was not adherent to the mass. There was a surgical scar of a left herniotomy (?). The inguinal glands were not enlarged. Laboratory: Urine, trace of albumin and a few pus and blood cells; hemo-

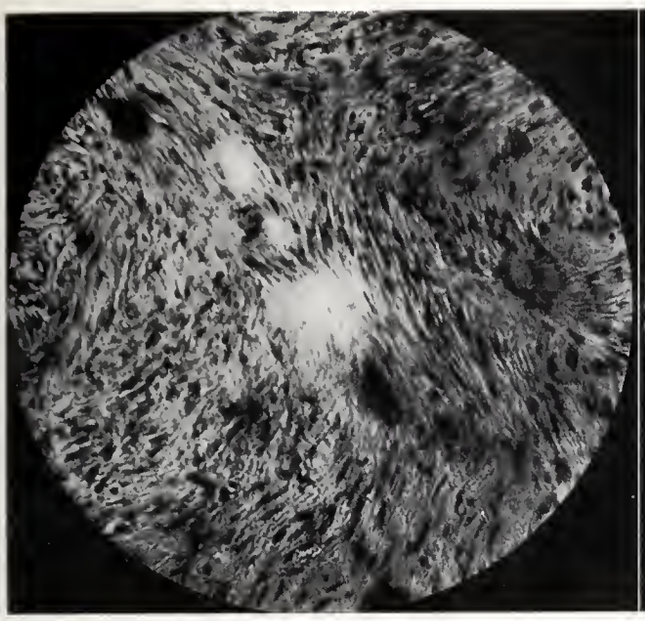

Fig. 2.—Microscopic section of original tumor.

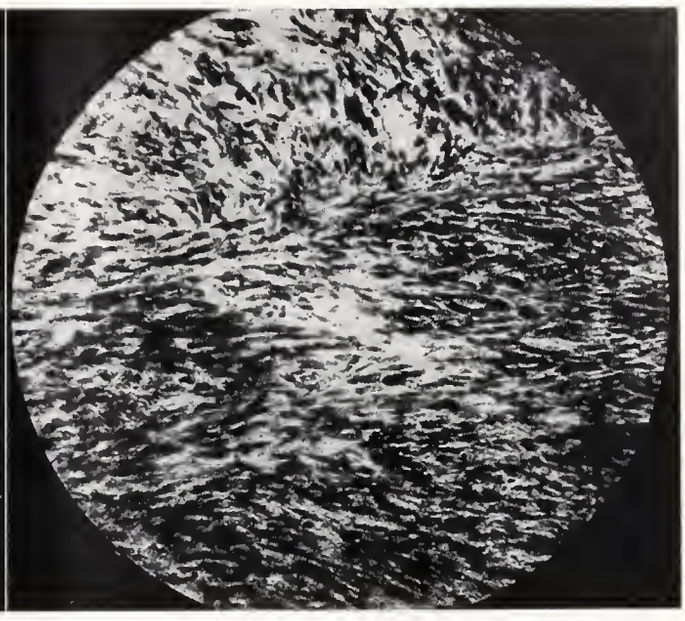

Fig. 3.—Microscopic section of pulmonary metastasis.

globin, 72; white blood count, 12,100, with a normal differential count; blood Wassermann, negative.

On November 15 we removed this tumor under spinal anesthesia, ligating cord and vessels as high as possible without opening the abdominal cavity. The wound was closed with drainage. Postoperatively there was considerable foul drainage and the wound healed slowly. Chest x-ray, taken December 8, showed a wide aortic shadow, but no evidence of metastasis in the lung. Patient was discharged December 15, 1932.

*Report on Pathology.**—Specimen consists of an encapsulated, nodular, firm mass, which measures 16.5 by 11 by 11 centimeters (weight 1435 grams) (Fig. 1). Testicle and tunica vaginalis are adherent to one side of the mass. The tumor mass on the cut surface is found to be divided into a number of more or less rounded, fairly well-defined nodules. The tissue is white and fibrous in appearance, except in larger areas where there is yellow discoloration, apparently due to necrosis. Microscopically the tissue consists of entwining bundles of fiber and is very cellular. A large portion of the nuclei is of fairly even size and is cigar-shaped; only a few mitotic figures are present. In part of the specimen the tissue is completely necrotic. Pathological diagnosis: Fibrosarcoma of testicle (Fig. 2).

Patient returned to the hospital January 22, 1934, in a terminal state. Three or four months previously he had developed pain in the left chest with "prune juice" sputum, followed by increasing dyspnea. He presented a failing heart, with fluid in the left pleural cavity and abdominal distention. His scrotum was healed without evidence of recurrence. Death occurred the following day.

Autopsy.—The left pleural cavity contained a large degenerated tumor mass and bloody fluid which had compressed the lung upward to less than one-half normal size. This tumor was densely adherent to the diaphragm and chest wall. The compressed lung contained a single tumor mass the size of a lemon in its lower portion. The right lung was edematous and contained a half-dozen nodules of tumor tissue scattered throughout the parenchyma, varying in size from 1 to 4 centimeters. The liver was one-half normal size, with its entire surface studded by small tumor masses. Upon section these tumors were found replacing most of the liver tissue. There was a large median prostatic lobe 2 centimeters in diameter, and a dilated left kidney and ureter. There was no evidence of metastatic involvement of the pre-aortic glands or the stump of the spermatic cord. Microscopic: Sections of the lung are found to be associated with a definite tumor nodule. Each of the nodules is found to be composed of irregularly arrayed masses of spindle-shaped cells, which are numerous, and which in certain areas vary quite definitely in size. In certain areas there are numerous tumor giant cells. Mitotic figures average about eight per high dry field. There are also areas of degeneration and hemorrhage. Sections of the liver present nodules which appear identical with those described in the lung. Spleen, kidney, ureter, and prostate show no malignant involvement. Diagnosis: Spindle cell sarcoma metastatic to lung and liver (Fig. 3).

* From the College of Medical Evangelists, Loma Linda.

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Case 2.—C. M., white male, nineteen years of age, was admitted to Riverside County Hospital on November 20, 1928. He complained of swelling of the right testicle, which was first noticed seven months previously and which had been gradually increasing in size. Past history negative, except for questionable injury a year previous. Family history negative. Examination showed a normal individual, except for palpable lymph nodes in both inguinal regions, and a firm enlargement of the right testicle to three times the normal size. Laboratory: Urinalysis normal. Blood count within normal limits. Blood Wassermann and spinal fluid Wassermann negative. Surgery was postponed because of upper respiratory infection and testicle was not removed until December 14, 1928. Simple castration was done, ligating the vas as high as possible. Patient made an uneventful recovery, except for a moderate drainage, and was discharged January 15, 1929. He is reported as well and working at the present time. Pathology:* The tumor mass, 4 by 4½ by 3 centimeters, is separated from the testicle but adherent to the connective tissue at the hilum and to the tunica vaginalis. Cut surface shows fibrous trabeculae and a few hemorrhagic areas. Two small masses, 1 centimeter in diameter, lie at the upper pole of the upper mass. Microscopically, the testicle appears normal. Section through the tumor shows a diffuse arrangement of cells most of which are spindle-shaped. There is considerable variation in the size and shape of the cells. Mitotic figures are abundant. Diagnosis: Spindle cell sarcoma of testicle.

COMMENT

The two cases reported here occurred in 16,169 general hospital admissions over a ten-year period. A search of the available literature fails to reveal any case of primary growth occurring as late in

* From the College of Medical Evangelists, Loma Linda.

life as one reported here. The tumor metastasized entirely by the blood stream, as disclosed by autopsy. The second case shows a five-year cure by simple castration.

Glenwood Building.

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DISCUSSION

Oran I. Cutler, M. D. (Loma Linda).—It has been my privilege to examine sections from both of these tumors. Those taken from various parts of the original tumor, in the first case reported, are all of the same appearance. The structure is indistinguishable from that of sarcomata arising in fibrous tissue in other parts of the body. If a teratomatous area existed in the tumor, it was very tiny at the time the tumor was removed. The mode of metastasis is more in keeping with that of an ordinary sarcoma than with the usual spread of embryonal tumors of the testicle.

In the second case reported, while the main mass of the newgrowth removed was outside of the testicle, there are areas in the tumor which are alveolar in structure and in which lymphoid cells are fairly abundant. In other parts of the tumor the cell arrangement is more diffuse, and the cells are mostly spindle-shaped, but less definitely fibroblastic in nature than those in the first case. This growth is apparently an embryonal tumor, in which there is a variation in structure such as is seen in different portions of many malignant tumors.

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E. Forrest Boyd, M. D. (909 Roosevelt Building, Los Angeles).—The two cases reported by Doctors Card and Bingham are individually interesting, the one from advanced age, the other in the fortunate outcome, and they are almost classical examples of statements made in literature concerning the distribution of the disease, on the one hand, and the efficacy of comparatively early surgery on the other.

The authors allude to the relative and absolute rarity of such cases, and the controversial elements of the classification. Despite the universal scarcity of neoplastic diseases of the testis, there has been and is a growing amount of animated interest in the subject, with its consequent reflection on the current medical literature. Even a hasty perusal of this literature impresses one with the convergence of discussion on three points: origin, nature, and pathology of the tumors.

As a result of generations of discussion among pathologists relative to the nature and origin of testicular tumors, much of the fog-banks of controversy have been dissipated and we are at present confronted with two rather conclusive theories of classification. One large group consists of teratomata, a smaller group of the seminoma type, and a disputed third group, consisting of the sarcomata, constitutes 1 to 2 per cent. The fact remains that the histopathology of tumors of the testis is in many cases conflicting, and often even misleading, which makes an accurate or definite classification very difficult.

We are face to face with the impressive fact that malignant neoplasm of the testis is a serious, though rare, condition, and that the patient as a rule does not see his physician until after metastasis has taken place.

The success of treatment, as in so many surgical and medical cases, depends upon the sensitive and often faulty strand of the medical fabric known as diagnosis. However, many cases are promptly diagnosed in an accurate manner, but the presentation of the patient for examination has been too long delayed. At the present time radical and early surgery, combined with radiation as determined by the more recent concepts of that portion of the surgeon's armamentarium, should be the treatment of choice.

THE PROBLEM OF DEMENTIA PRAECOX

By Donald A. Macfarlane, M. D.
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Discussion *by William Palmer Lucas, M. D., San Francisco; A. L. Gleason, M. D., Oakland; Edward W. Twitchell, M. D., San Francisco.*

IT is not too much to say that of all the problems concerned with mental health and disease, one of the most puzzling, elusive and discouraging is the one comprised in that large and varied group which we conventionally refer to under the heading of "dementia praecox." It is puzzling to the physician to attempt to gain some understanding of the underlying forces and conditions involved, or for the practitioner whose duty it may be to bring some measure of understanding and peace of mind to the families or friends of his schizophrenic patients. It should be the concern of all those whose job it is to deal with the problems of childhood and adolescence—teachers, social workers, parents, and doctors. It is discouraging for the therapist who attempts the arduous task of dragging these patients back from the brink of mental disaster; and, if he be honest, he will often question whether, after all, his ministrations have had a great deal to do with such "recoveries" as may accrue to his credit. It is elusive for all those whose vital interest in childhood urge them on in the search for the early signs of distress, the

warnings and the danger signals, by which they may know that an individual is beginning to lose his battle for adjustment with a rigorous environment and is showing the first cracks in the structure of his personality—cracks which will lead, eventually, to a dilapidation and disintegration of his habits and personality. It is a problem requiring the utmost of clinical acumen and human understanding, unless we are going to remain, as so many of us now are, content to pin on a diagnostic label and dispatch the patient to oblivion in some custodial institution.

QUESTIONS WHICH ARISE

The following paragraphs are an attempt to compress into succinct form a discussion of a few of the questions that any physician may have put to him in his professional capacity, or which may have arisen in his own mind when he has been confronted with these trying problems.

The questions that most frequently come up are: (1) Just what *is* dementia praecox? (2) Is the outcome really hopeless? (3) What are the indications by which one might have known ahead of time that something was going wrong? (4) "Now that this has happened to John, is it safe for his brothers or sisters to marry?"

SOME SALIENT FEATURES IN SCHIZOPHRENIC PICTURE

It will suffice, in refreshing our minds concerning the general outlines of the schizophrenic picture, merely to recall a few of the salient manifestations of this process of progressive psychobiological disorganization: the simple type, with its gradually developing apathy, loss of interest and let-down in efficiency and activity; the hebephrenic type with silly behavior, grimacing, odd mannerisms, stereotyped activity, untidiness, queer utterances; the catatonic type with stiff and awkward motions, catalepsy or the tendency to hold fixed postures, negativism, tantrum reactions, mutism, and stupors; and the paranoid type with suspiciousness, ideas of self-reference and delusions of persecution. We are familiar with the general tendency among these patients to present hallucinations in all sense modes and queer delusions of all kinds. On the somatic and physiological levels we see the mild gastro-intestinal malfunctions, the many signs of autonomic instability, the confusing and fluctuating disturbances of reflexes—in short, a diffuse and complex set of mental and behavior symptoms that are queer, odd, bizarre, and incongruous.

It was much more than mere academic hair-splitting that led Adolf Meyer, as far back as 1903, to revolt from the classical descriptive and disease-entity concepts of the functional psychoses in general, and dementia praecox in particular, that psychiatry had inherited from the brilliant pioneer work of Kraepelin. It was essentially an urge to envisage the human organism in all its complexity and all its manifestations of adaptation. It made him dissatisfied with the empty neatness of such etiologic factors as "auto-intoxication," and question the validity of the findings of those who sought the critical answers under the microscope. It led him to say, "Instead of merely appealing to cortex changes of obscure correlation, or to equally obscure auto-intoxications, or to arrest of development, I refer to the disharmony of habits, disharmony of those regulations which shape a well-balanced economy: the intestinal and circulatory functions, the sexual life and, above all, the trend of interests depending in its integrity and efficiency on a certain equilibrium. . . . And it will be our duty to define in actual cases what sets of habits we find interwoven, and with what effect. This directs the attention to the investigation of matters which are open to influence in education, and to a more rational management of dementia praecox, as well as many other mental disorders: and habit disorder is to be treated by habit training, not by vague encouragement and excessive protection and mere fighting of incidental disorders."[1] And there is little doubt that this point of view has furnished the impetus toward the modification of our concepts and ways of thinking about schizophrenia, to the end that we are coming more and more to use, for their dynamic connotations, such terms as "schizophrenic processes or reactions" rather than to say that "the patient *has* schizophrenia" or "he *is suffering from* dementia praecox." And these schizophrenic processes mean what the term implies—an odd sort of "splitting off" of fantasy and subjective ruminations from considerations of the concrete world of reality with all its problems and demands for adjustment. These demands and problems are implicit in the very process of growing up: demands of habit training, of adjustment to a social milieu, demands of school and work and family formation, the necessity to manage and adjust to instinctual drives, and so on. While it is eminently proper that these patients should continue to be studied from the point of view of biochemistry, pharmacology, histology and endocrinology, yet, as the data in these fields accumulate, it becomes increasingly evident that a true conceptualization of these processes is to be couched in terms of *inadequate life adaptation and personality and habit disorganization, in a setting* of more or less subtle and obscure biological "disharmonies."

Kraepelin insisted that if a dementia praecox patient recovered, it meant that the diagnosis had been incorrect. Dementia praecox was, by definition, a disease from which one did not recover. But with the change from this older disease-entity concept, based implicitly on prognosis to one that views a basically fragile and inadequate organism making unfortunate adaptations to the job of getting on in the world, we are ready to modify our former unduly pessimistic attitude toward prognosis. There is no doubt that we often see schizophrenic "flurries," passing reactions having the indubitable characteristics of the early dementia praecox picture. It is equally true that we witness individuals, pretty obviously headed for a mental break-up of this sort, shunted back onto the road to mental health. And we have the example, un-

[1] Studies in Psychiatry, Nervous and Mental Disease Monograph Series, No. 9, Vol. 1.

usual, to be sure, of the institutional patient who miraculously "recovers," for no known reason, after years of complete dilapidation. In spite of these encouraging facts, however, it still remains true that the outlook for these people is definitely grave.

It is the frequent and distressing preoccupation of a schizophrenic patient's relatives that everyone, especially themselves, failed to recognize the signs of the approaching storm until it was upon them, and it is probably at this point more than any other that the responsibility of the physician or the teacher lies. While prescience is often impossible, equally often one finds that the storm signals have been flying for months or years. By dint of vigorous propaganda, largely at the hands of the mental hygiene enthusiasts, most of us have acquired the formula supposed to describe the preschizophrenic personality—shy, seclusive, sensitive, shut-in—and there has grown up a perfect furore for socialization and extraversion of such youngsters as seem to fall in these catagories, with a failure to discriminate between the qualitative differences that make "introversion" for one child a possible asset, and for another a liability. The recent study of Kasanin and Rosen [2] should shock us out of our uncritical confidence in the alliterative "shy, seclusive, shut-in." Beyond a doubt such personality traits often figure in the prepsychotic picture, but these workers found them as antecedent traits in only about 16 per cent of their group of 151 schizophrenic patients.

IMPORTANT FACTS FOR THE PHYSICIAN

What, then, are some of the indications to which the mind of the physician should be sensitized? There *is* a sort of shy, seclusive shut-inness which carries to the intuitive clinician a feeling of avoidance of the rigors of brass-tack living, the shrinking of an inadequate personality from the manifold stresses of life. A youngster showing these trends is apt not to form valid and productive substitutes in the form of well-organized and individualistic endeavors, but rather he tends to wander off into the poppy-fields of fantasy; and a certain "goodness" that he may show is more often born of inner timidity than of strength and hardiness.

With the onset of puberty and the progress of adolescence there is frequently observed a growing tendency to withdraw from the more usual and normal interests, and the substitution of preoccupations with abstractions—religion, morals, ethics, or empty and immature interests in philosophy. One would feel a bit more comfortable if he could assure himself that an adolescent who begins writing poetry or develops an urgent but immature interest in, say, Karl Marx, showed no obvious indications of those subtle, premonitory deviations that suggest a precarious situation. A common picture is seen in somatic concerns and anxieties, often bizarre and distorted, with a general and progressive let-down in energy output without apparent physical cause. (This is not to be confused with a "Tom Sawyer" sort of thing, pumped up for the purpose of attention-getting, a picture that is usually transparent and transitory and not accompanied by any essential or continued decrease in activity.) The hypochondria may focus on the heart or other viscera; and there are the very common "headaches" which turn out, upon questioning, not to be the usual familiar headache, but head "sensations" of pressure, constriction, emptiness or "queerness." These anxieties may become so obsessive as to amount almost to phobias; as in the child who at the age of nine develops a fear of going blind and at fifteen begins to show the unmistakable signs of disorganization. These conditions are not "just neurasthenia," and in any child or adolescent complaints suggesting this term should be looked upon as of possible serious significance. Concern, conflict and preoccupation over sexual matters are so frequent a background for these processes, especially in those social strata where conventional taboos have become firmly entrenched, that it is small wonder that a gruesome folk-lore has grown up around the subject of masturbation; and in this connection there may appear a hypersensitiveness, especially toward friends and playmates, with the feeling that "they act kind of different toward me" or "they don't like me as well as they used to."

Again, we may see the unaccountable tantrums punctuating, perhaps, an extended period in which the emotional life seems to be undergoing atrophy or distortion. School work slumps, and there are complaints of difficulty in "thinking" and "concentration." Religious or occultistic interests may appear, with a tendency to moralize with other members of the family for their care-free interests in a good time; or prudishness and an oversensitive aversion to the opposite sex, often in a setting of irritable negativism and unexplainable whim.

The psychasthenic picture, marked by tenseness, obsessive ruminations and compulsive or ritualistic behavior, or a precocious overconscientiousness in which there is placed a solemn, anxious or distorted emphasis on real or imagined responsibilities, or the appearance of hysterical or conversion phenomena—these trends, especially in the younger person, imperatively demand more attention than the mere advice to "snap out of it."

We should hasten to say that any of these premonitory trends may exist in a person in no obvious danger of serious mental illness; but when they are found it is inexcusable for the physician not to keep in mind that the welfare of the patient who shows them demands careful and understanding attention. This is especially true where there is a lack of a certain "balance" in the form of vigorous and more or less consecutive and organized interests in work or play, and which, on the whole, should be reasonably "extraverted."

HEREDITY AND MARRIAGE

Just as the causes and contexts of the many varieties of schizophrenic processes are clouded

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2 Kasanin and Rosen: Clinical Variables in Schizoid Personalities, Archives of Neurology and Psychiatry, 30:538 (Sept.), 1933.

and confused by seeming correlations, and the prognosis grave and discouraging, so also is another dilemma raised when the question of heredity and marriage comes up. And again we are unable to give categorical answers, for the data on the hereditary aspects of mental disease are inconclusive. When we have attempted to balance one research study against another contradictory one, and to combine these resultant conclusions with impressions from our own clinical data, we seem to be left only with an impression of trends and tendencies. We come to expect more frequent manifestations of basic instabilities among siblings of schizophrenics than among preceding or successive connections. Yet the world is full of brothers and sisters of dementia praecox patients who have been normal, stable people, and who have begot apparently normal children. The betting odds, if we may express the probabilities in such terms, would probably favor the prediction that siblings of schizophrenics, taken as a group, will produce descendants among whom will be found more cases of deviations than would be found among descendants of siblings taken at random. The best answer to each individual question lies with each individual case. In taking our routine family histories, we often slur over data and neglect pointed scrutiny that would disclose among siblings of patients, trends that would lead us, in one person, to hazard a favorable prediction and, in another, a more questionable one. We are all aware of the need to examine other members of a family when one is found with a positive Wassermann, and, similarly, in cases of these "functional" mental disorders, where the question of marriage is so apt to arise, a study of the individual will be our best, though by no means infallible, guide for judging what may be expected to happen to him.

COMMENT

The fruitful time to do something about this whole problem, as in so many other problems of medicine, is during the stages when one may expect to forestall a complete pathological picture. There is, after all, excellent reason for the usual feeling that the schizophrenic process, once it has got well under way, is one that is extremely difficult to ameliorate; otherwise it would not be true that this group constitutes a higher percentage of the patients in our mental hospitals than all the others put together, and that a smaller percentage of them is returned to society in a condition even approximating normality. The big problem is one of prophylaxis, requiring insight on the part of the physician, and a vigorous and intelligent coöperation on the part of all those having to do with the welfare and training of youth. It requires of the responsible members of the community a well-balanced awareness that such problems exist—well-balanced, so that one does not become apprehensive about a bogey if it does not exist, but at the same time keeps a vigilant eye out for situations that genuinely need attention.

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DISCUSSION

William Palmer Lucas, M. D. (490 Post Street, San Francisco).—Doctor Macfarlane's article, "The Problem of Dementia Praecox," is much needed and gives the story of the various types of dementia praecox very well. It is heartening to see that the modern psychiatrist is not so pessimistic in regard to the outcome of dementia praecox, provided it is recognized early and treated sympathetically and continuously. What he says in regard to the fact "that these premonitory trends may exist in a person in no obvious danger of serious mental illness; but when they are found it is inexcusable for the physician not to keep in mind that the welfare of the patient who shows them demands careful and understanding attention," should be emphasized over and over again to every practitioner. Only by the early recognition of these unstable personalities and lack of balance, and by careful observation and supervision, can anyone determine in the early stages whether these symptoms are leading toward real dementia praecox, or whether it is just one of those passing phases which a good many adolescents go through. What Doctor Macfarlane says in regard to heredity and marriage is also well worth observing, and, as he observes, "the best answer to each individual question lies with each individual case." Again, he reëmphasizes the whole situation in declaring that "the fruitful time to do something about this whole problem, as in so many other problems of medicine, is during the stages when one may expect to forestall a complete pathological picture." The article is well worth reading and taking to heart.

A. L. Gleason, M. D. (400 Twenty-ninth Street, Oakland).—It is well known that the majority of the schizophrenic patients in institutions showed early manifestations or symptoms of this disorder so clearly described by Doctor Macfarlane. These patients were described in terms of personality maladjustment, and were easily recognized by teachers, physicians, and administrators.

Instead, however, of these children receiving help from their school environment, at that time they found themselves out of step, different, frequently disciplined and usually ostracized by others of their age and class. As a result, they only withdrew further from reality.

In the modern education, intelligence training is considered only one aspect of the educational aim. It also involves aid and training in learning how to meet one's problems, and provides for the wholesome, well-rounded growth and development of the entire personality.

The modern progressive schools, child-guidance clinics, Parent-Teacher associations, and various other organizations are overcoming the old one-sided conception of education. Parents and teachers are becoming familiarized with the early symptoms of schizophrenic patients. Child-guidance clinics have been established, and therapeutic training is being furnished. Hence, I believe that within the next generation we should see some very encouraging results.

Edward W. Twitchell, M. D. (909 Hyde Street, San Francisco).—Much water has run under the bridges since the days of Kraft-Ebing, when most of the patients whom we would nowadays classify under the heading of schizophrenia were regarded as varieties of paranoia. During those years an enormous change has taken place in our conception of these conditions, and a great number of individuals are now grouped as having a schizophrenic reaction, or having schizoid mentalities, who then would hardly have been regarded as patients for the psychiatrist.

The schizoid type of reaction is found in many an individual who must be regarded as perfectly normal. This is notably so of such writers as Gertrude Stein and her imitators, or of such artists as Picasso. These individuals have a mental process which is inconceivable to the ordinary man.

I am convinced that when Gertrude Stein writes such a thing as "Three Sitting Here," or the libretto of her recent opera, she writes it just as spontaneously as James Norman Hall writes his sea stories. She is, in other words, a facultative schizophrenic, and anyone not schizoid in type who attempted to do the same thing would fail completely; just as an ordinary draftsman would be completely at a loss to do the things which the ultra-modern seem to do so naturally. To the psychiatrist there is nothing strange in the productions of a Gertrude Stein or a Picasso—they are doing something that resembles very strikingly the speech, writing and drawing of his schizophrenic patients, and he feels himself on familiar ground.

We have, therefore, a large number of individuals, living successful lives, well adjusted to their surroundings, who none the less have an entirely different psychic make-up from that of the ordinary man. It is only when they become unable to shift themselves at will back onto the ordinary paths that we have to regard them as pathologic and candidates for psychiatry.

So the psychiatrist of the present day finds his field enormously widened as compared with that of forty years ago, and one of his most faithful sources of effort is going to be in dealing with those whom he has learned to recognize as having this type of mental process long before it can become evident to the untrained observer.

It is reasonable to believe that, seeing these things in advance, he may be able to protect such individuals if given opportunity, and to prevent their coming to that point where their difficulties "jump to the eyes." This is mental hygiene at its best.

"Auto-intoxication" has been worked to death in all fields, let alone psychiatry, and hardly a psychiatrist now thinks of schizophrenia as the result of autointoxication, nor does any new book appear with dementia praecox grouped with the "endogene Verbloedungsprozessen." We look for more subtle things, and modern neurophysiology has shown us that there must be paths of which we know little which can be used on occasion when the necessity arises: schizophrenia may be simply the habitual use of unconventional paths, and it may be well to say of the patient, not that he has dementia praecox, but that he has contracted a schizophrenic habit.

One has learned that "dementia praecox" no longer closes the door of hope to the individual, and the more extensive one's experience, the more can one recall of those who, apparently hopeless and deteriorated, have made remarkably complete and lasting recoveries; and the more one sees of the extraordinary changes which take place, the more does one become convinced that sooner or later a key or a bunch of keys is going to be found to unlock the doors to this problem.

When one sees a catatonic, rigid, stereotyped, mute and negativistic, and one who has been so for weeks or months, return within a few weeks' time to a condition of apparent normality and remain so for months and years, the more hopeful does one become that it is only a matter of time before we shall be able to do something which will enable us to bring about such transformations at will, and not grope more or less blindly as we do at present. Our inability to do this now also means that we are unable, except in a very uncertain way, to head off what we feel pretty sure is coming; so that our prophylactic treatment is almost as futile oftentimes as is our curative.

We still know little about heredity in the insane, and statistics are fallacious; but the longer one goes on, the less does one feel justified in frightening or worrying a family in which a case of schizophrenia has appeared.

On the best tree in the orchard one finds deformed and imperfect fruit. So the best family stock may occasionally produce an example of schizophrenia. One should not condemn the rest of the fruit or hesitate to graft or bud from that stock.

Doctor Macfarlane has made a worthy contribution to what is probably the most important psychiatric problem of the present day.

COMPULSORY HEALTH INSURANCE*

By Frederick L. Hoffman, LL.D.
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THE practical interest of the British medical profession in the administration of national health insurance is perhaps best illustrated by the following precise statement in a recently published volume on "The British System of Social Insurance" by Percy Cohen, a recognized authority on the subject:

"Nearly 16,000 doctors are on the panels; over 10,000 chemists' shops supply medicines and appliances to insured persons; every year the medical profession gives 60,000,000 attendances to insured persons and 58,000,000 insurance prescriptions are dispensed. Every day the insurance medical service attends to some 140,000 patients."

The relative importance of this statement may be better understood when it is pointed out that since 1881 the ratio of doctors to population in the British population has increased from 1 in 1514 in the year 1881 to 1 in 1337 in the year 1901, and from 1 in 1038 in the year 1921 to finally 1 in 881 in the year 1931. Thus, the number of patients to a doctor is constantly diminishing, increasing the economic problem of the medical profession. The 16,000 doctors who are on the panels are, for all practical purposes, state employees and subject to a wide range of rules and regulations that have nothing to do with the efficiency of medical practice, but are concerned wholly with the economics of the administration.

CAPITATION FEES

The capitation fee in 1931 was nine shillings per patient, but this was arbitrarily reduced by the government, on grounds of national economy, to the extent of 10 per cent. Since the National Health Insurance Act of 1911, there have been seven alterations of the capitation fee, the first four being increases. The fifth was a reduction accepted by the insurance practitioners in view of the economic conditions of the time. The sixth arose out of a Court of Inquiry, which awarded a higher sum than that offered by the Ministry of Health, the latter amount having been refused by insurance practitioners on the advice of the Association. The seventh alteration, which is the present temporary reduction of 10 per cent, came into force in October, 1931. A correspondent, writing in the *British Medical Journal* of January 14, 1933, complained bitterly of the Association's inability to protect the interests of the practitioners. In response, it was pointed out that "perhaps he was ignorant of the four increases obtained through the efforts of the Association, which forced the Government in 1912 to increase the capitation fee from 4s. to 7s. 3d. As a result of this action insurance practitioners as a whole received, up till the end of 1931, an extra 60,000,000 pounds. In 1918, and again in 1919, the Association obtained for certain sections of insurance practitioners bonuses which, from 1918 to the end of 1931, brought about a further increase of 1,500,000 pounds. When the Association,

* One of a series of articles on compulsory health insurance, written for California and Western Medicine by the well-known consulting statistician, Frederick L. Hoffman, LL. D. Articles in this series were printed in previous issues as follows: I, in April, page 245; II, in May, page 361; III, in June, page 411; IV, in July, page 33.

after arbitration, secured in 1922 and 1923 a capitation fee of 11s., it put another 3,500,000 pounds into the pockets of insurance practitioners. In 1924 the Ministry's offer was refused and a Court of Inquiry demanded; as a consequence, the Ministry's figure was increased to 6d.: this meant another 3,000,000 pounds to the Association's credit. In 1920 the Association obtained an increase of the mileage grant from 34,000 pounds to its present amount of 250,000 pounds—another 2,500,000 pounds for insurance practitioners. By its continued efforts, the Association has, since the passing of the Act of 1911 to the end of 1931, secured some 70,000,000 pounds for insurance practitioners."

DIFFICULT POSITION OF THE PHYSICIAN IN PANEL PRACTICE

All this will illustrate the economic interest of the British medical profession in the successful administration of national health insurance, demanding, however, an extraordinary amount of time and thought in view of the never-ending Parliamentary discussions and controversies in the newspapers as to what is and what is not adequate remuneration. The doctor stands between the insured population and their incessant demands for certificates of incapacity, frequently not warranted, and continuation of benefits not justified, and the administration aiming at the most economical management of the funds, which amount to huge aggregates subject to various bodies, particularly the approved societies and insurance committees. Regardless of every effort made to reduce claims, these aggregates during recent years show a decided tendency to increase. Upon this point an investigation by the Government Actuary revealed that, "measured by the number of weeks, claims for sickness benefit of men have risen by 41 per cent, of unmarried women by 60 per cent, and of married women by 106 per cent, while for disablement benefit the corresponding increases were 85, 98, and 159 per cent." In this connection Mr. Cohen observes:

"The chief inference drawn from these investigations is that a substantial proportion of insured persons claim, or continue to claim benefit who, on reference to an independent medical referee, would be found not incapable of work. That this tendency threatens the solvency of Health Insurance is clear from the official warning that 'there was a not unsubstantial proportion of insured persons who were claiming and getting benefit to which they had no legal or moral right, and it was the bounden duty of societies, in the general interest of their members, to stop any abuse.' In the absence of any indication of a deterioration in the general health of the people, approved societies appear to have the remedy in their own hands by coöperation in the adoption of measures to secure that a proper standard is applied in the issue of medical certificates of incapacity, and, secondly, in strengthening the safeguards in connection with the supervision of claims, one of the most important of which is the maintenance of an efficient system of sickness visitation."

On March 8 of the present year, a deputation from the Insurance Acts Committee was received by the Minister of Health, when Doctor Dain spoke

"of the hardship inflicted on many members of the profession by the 10 per cent cut on the 9s. capitation fee. This hardship is common knowledge amongst medical administrators, although hardly realised by the public. Many insurance doctors have had to take their sons away from public schools as a result of this and other deductions. The quarterly cheque without the cut was often completely mortgaged before its arrival; ends hardly met then, so that the loss of ten pounds out of every hundred just made the difference, necessitating change of plans, of outlook, and often of environment. The national emergency which docked panel cheques also affected private practice. The patient, who used to consult his doctor when not well, learnt to go without medical attendance; others who used to be regular private patients, went to hospitals; with the result that the receipts from private practice have fallen considerably in every area, and particularly in those industrial areas where unemployment is severe. The increasing number of doctors in private practice has made things still more difficult."

To this complaint the Minister could not make any definite promise, but he did pledge that their 10 per cent would be restored if that of other people were restored; but the outlook for its restoration is far from encouraging.

OTHER FINANCIAL ASPECTS OF PANEL PRACTICE

A careful reading of the current issues of the *British Medical Journal* and the *Lancet* would impress upon one the tremendous amount of time required by the medical profession to protect the economic interests of the panel practice. Complaints have been made that many of these practices are heavily mortgaged, and that the profession has fallen into the hands of money-lenders to a remarkable degree. This question is raised in the November 11, 1933, issue of *The Journal of the American Medical Association*, from which I quote the following illuminating extract:

"At a meeting of the National Association of Insurance Committees, it was stated that the cases in which young panel physicians assigned all their panel fees to money-lenders were on the increase. In some cases they were the salaried servants of the money-lenders, and subject to a month's notice. The Lancashire Insurance Committee had on its books seventy-eight cases in which panel fees amounting to $175,000 a year were assigned to money-lenders, who were exercising an increasing influence on the administration of medical benefit, though their only qualification was money. The young physician who had not the money to buy a practice went to an agency specializing in advancing on the security of practices. The first thing he had to do was to sign an undated form of resignation from the panel service and then a mortgage at the prodigious rate of 40 per cent. If he became soured and threw up the practice, the money-lender would pocket the gains to date and look out for a fresh victim. He completed the form of resignation already in his hands and notified the insurance committee of the name of the successor. In one case the wife of a physician, herself also one, became a party to her husband's contract and covenanted to apply for admission to the panel list and have transferred to her her husband's patients, if called on to do so by the mortgagee. The association decided to refer the matter to the executive council to take whatever action was deemed necessary."

Advertisements in current issues of British medical publications are common in which panel practices are offered for sale. In fact, most of the advertisements have reference to combined panel and private practices, often suggestive of very low fees for private patients, running down to almost 2s. 6d. in many cases, or about 50 cents, for consultation.

BRITISH OFFICIAL VIEW OF PANEL PRACTICE

From the official point of view, however, national health insurance in Great Britain has been an unqualified success. It has replaced the old club

system of medical treatment which was not far from being a national disgrace. In a twenty-one-year review of health insurance by Sir George Newman, chief medical officer of the Ministry of Health, it is pointed out that

"when the Health Insurance Bill was proposed in 1910, we were told that it had three fatal blemishes: first, the scheme was said to be too expensive to be profitable and too elaborate to be worked; secondly, that the doctors would not coöperate in it, and if they did, they would be an inferior part of the medical profession and their treatment would be perfunctory and inadequate; and thirdly, that many of the insurable public desired to be exempted from the scheme devised, and thus the persons actually insured would only be those who wanted something for nothing, who were greedy of benefits, and who would become malingerers. These were fairly formidable complaints about a bill that had got to be passed through Parliament. There was some plausibility about these complaints, but in the short period of twenty years they have each been proved to be substantially false. The scheme was, of course, imperfect at the beginning, and is imperfect now, but on the whole it is beyond dispute that you and your colleagues all over the country have builded better than you knew, and have produced a public medical service incomparably better than the former sick club, slate club or contract medical practice."

All of this must be admitted by anyone familiar with the facts; but the other side demands even more attention. The medical profession has unquestionably been divided into panel and non-panel physicians, the latter assuming an air of superiority; and justly so, in view of better service to their patients. In my judgment it is a foregone conclusion that the present agitation for state medical service will, in course of time, replace national health insurance and establish medical treatment for at least the wage-earning element of the nation at a lower rate of expense, and with a wider range of benefits to the populations concerned.

NATURE OF DISEASES MET WITH IN PANEL PRACTICE

As has been said in an editorial on Sir George Newman's address in the *National Insurance Gazette* of April 12, 1934,

"Sir George does not say anything about cost—that is not his business—nor does he say whether or not we ought to have got much better value for the money spent, though we gather that he has views on that subject. But the facilities provided for the medical treatment of the great mass of workers are better than they were before the National Insurance Act, 1911, came into operation. Again, 'the Health Insurance system has enabled us for the first time . . . to measure the character of our domestic problem of disease.' About half the insured persons suffer from sickness in the year, and approximately 20 per cent suffer from bronchitis, pneumonia, and other diseases of the respiratory system. Thirteen per cent suffer from indigestion, dyspepsia, and other maladies of the alimentary tract. Ten per cent suffer from lumbago and rheumatism; and 10 per cent from injuries, accidents, and septic wounds. That gives us the line of attack."

In other words, most of the medical treatment is for minor ailments, and not for the serious chronic and more costly diseases demanding more skillful attention. The mortality from the latter diseases has not been reduced in England to any measurable degree under national health insurance, and this cannot possibly be achieved under the prevailing methods of panel practice.

(To Be Continued)

FINDING HEALTH INSURANCE FACTS*

By Chester H. Rowell, LL.D.
San Francisco

THE California State Medical Association has appointed a fact-finding committee to study health insurance. One of its members will go to Europe, to report how the system works there.

* * *

It will be interesting to see what "facts" this board "finds." For "fact-finding" depends as much on the finding as on the facts. Lawyers do their finding one way and doctors another. Paradoxically enough, American physicians, hitherto, have gone at this question more like lawyers.

* * *

The physician makes his diagnosis on all the facts. If superficial appearances seem to indicate one thing and the laboratory test shows another, he considers both and determines his treatment accordingly. He has no "side," to "win" or "lose," and his only purpose is results.

* * *

The attorney, on the other hand, knows before he starts which side he is on, and seeks authorities and evidence for that side. It is for the opposing attorney to find things for his side. Whichever way the decision is, that lawyer "wins."

* * *

Going at it the lawyers' way, the doctors could easily find plenty of material against health insurance. They can find complaints of its operations, abuses and neglects in its "panels," and some health conditions which America has met better than Europe. They can show that, at their own expense, they are meeting individually some problems which Europe meets by organized service at the expense of the insurance funds. As attorneys for the prosecution, they can make half a case.

* * *

Or, going at it like doctors, they will find, first, that most of the "facts" are already "found."

* * *

Abundant statistical and actuarial information is already available, showing what any system will cost, and what it will do for patients and practitioners. They can learn, even without going to Europe, how the system works there; its faults and its accomplishments, and what produced both. There are plenty of exhaustive reports.

* * *

For conclusions, they will find that no country which ever tried health insurance has abandoned it or proposes to do so; that whenever it has been established in one country it has been imitated in others; that the changes have always been in the direction of its extension, never of its curtailment; that it has worked best where the profession coöperated to establishing it, instead of yielding to it afterward; that it has nowhere, except in Russia, where everything is "State," become the bugaboo of "State medicine," and that, whatever

* This article by Chester H. Rowell, Esq., was printed in the San Francisco *Chronicle* on May 29, 1934. Dr. Rowell, who was one of the guest speakers at the Riverside annual session, April 30 to May 3, 1934, on that occasion spoke extemporaneously, and in his busy life as an editor has not found opportunity to transcribe his address. California and Western Medicine presents his discussion of certain phases of health insurance as he printed them in the San Francisco *Chronicle*, because they reflect some of his viewpoints.

its faults in practice, they are nowhere as great as those of the systems it succeeded.

* * *

Civilization has developed two methods of meeting the financial vicissitudes of life—individual thrift, and insurance. And it has pretty well determined which risks shall be met each way. Nobody insures his daily food supply, and everybody insures his house against fire. The difference is that the one is averageable and the other is not.

* * *

Whoever is able to pay for his food at all can pay for it each day, out of the earnings of that day. He may need insurance against unemployment, which would stop his earnings, but not against inability to buy food while he is earning.

* * *

But nobody could pay for rebuilding his house out of his earnings of the day it burned. Neither can he know beforehand how many days he will have, before it burns, to save the price of rebuilding it. It probably will not burn at all, but it may burn tomorrow. It would be as absurd to guard against fire by individual thrift as to provide each day's food by insurance.

* * *

Sickness is definitely in the unaverageable class. Its average cost is quite within the means of anybody who is able to pay for his food, clothes, and shelter. But it never comes, as they do, in average amounts. Most years it does not come at all, or comes so little as to be negligible, in cost and loss. But some time, and it may be tomorrow, a disabling illness will come to each person, stopping his earning power at the very time when it increases his expenses. In this respect it is like fire, against which everybody insures, rather than like food, which nobody insures.

* * *

Also sickness, unlike fire, is a social problem. If an individual fails to insure his house, its loss affects only him. Or, if it would affect his creditors, they require him to insure it. Voluntary private health insurance, if adequate (which it rarely is) might meet the individual problem of those who take it out. It cannot meet the social problem, since those whom society most needs to have insured are the very ones who do not do it.

* * *

Consequently, every civilized nation except the United States has met this social problem by obligatory social health insurance, covering wages as well as medical care, and including in its obligatory feature practically the same groups which in America are already covered by obligatory industrial accident insurance. For others it is voluntary. And those whose incomes would not be stopped by illness, and who already have a reserve to meet it, are naturally not included in its benefits.

* * *

This is experience, with the whole world as its laboratory. Since experience has proved it good for the people, the people are going to establish it here, as they have done everywhere else. But it ought to be made good for the doctors, too. If they will coöperate in its establishment, that can be done. If not, they may impose on themselves, in the beginning, the price which some of their short-sighted colleagues at first paid elsewhere.

GOVERNMENT AS GUARDIAN OF HEALTH OF PEOPLE*

IS STATE OBLIGATED TO PROTECT CITIZEN AGAINST DISEASE AND UNEMPLOYMENT AND IN OLD AGE?

"THIS coming winter, according to a promise by President Roosevelt to the American people, 'We may well undertake the task of furthering the security of the citizen and his family through social insurance.'

"When President Roosevelt was Governor of New York he sent for Dr. Thomas Parran, Jr., then with the United States Public Health Service, to head the New York State Commission of Health. Doctor Parran, speaking at the last meeting of the Joint Conference of the American Academy of Political and Social Science and the College of Physicians of Philadelphia, said:

"'Are we to go forward in the coming years, veer left or right? We will not go back. We must assume that in any event we have faith in our capacity to adjust governmental forms to serve the people better than in the immediate past.'

"With the President's proposed social insurance still to be legislated on this winter, it is interesting to go a bit further with Doctor Parran's views.

"'If the current economic revolution leads ahead,' says he, 'to a regulated capitalism, with industrial coöperation under governmental control, then we shall almost certainly see various schemes of social insurance-old age, unemployment, and sickness.'

Millions Treated Free

"In recent months approximately 5,000,000 families, almost 18 per cent of the total population, have been receiving their medical services from public funds. Will these groups insist on continued care and medical treatment? The history of the veteran's benefits provides a possible comparable analogy.

"The average physician now is receiving less than half the annual income he received in 1929. Students paying approximately $12,000 for their ten years' medical study, earn comparatively little during their first eight years of practice. There are two doctors earning less than $2,500 a year to every physician earning $10,000.

"State medicine is no new thing. Europe and the Continent have had socialized medicine for many years. In a study made for the Julius Rosenwald Fund, Dr. E. H. L. Corwin, director of the United Hospital Fund of New York, declares that nowhere is there state medicine except in Soviet Russia, where the state is the sole employer and the sole owner of all capital and where the state provides the medical care for the entire population, and where almost all physicians are employees of the state.

"Doctor Corwin qualifies his view to state that there is no country where the state disclaims all responsibility for the care of the sick. He believes

* This article, which presents some other phases of the health insurance problem, is reprinted from the *United States News* of July 16, 1934.

that the closest nation to state medicine on a socialized form is Holland, where, however, there is no state intervention or even state law regulating the insurance funds of organized physicians and druggists. Almost every Hollander belongs to some mutual insurance fund.

German and English Systems

"In Germany, the sickness insurance companies come under a certain amount of governmental administrative and judicial powers. The state does not contribute anything to the funds.

"In Denmark, according to Doctor Corwin, 'without compulsion, the state feels that it is its duty to provide hospital facilities for the entire population. Nearly all of the Danish physicians practice as salaried employees of the municipalities.'

"England, as early as 1912, established the so-called 'panel system.' Health insurance is made compulsory, and all insurance funds of the lower-salaried classes are administered by the crown. Choice of doctors is permitted, although in the service dispensed confinements and some other medical services are not included.

"Sweden, which approximates Denmark in its state medicine, incidentally has the best hospitals in the world, declares Doctor Corwin.

"Therefore, it will be seen that other than in Soviet Russia, state medicine, strictly speaking, does not exist. Surveys made show that in many European countries the care of the sick is below that of our own communities.

Hospital Care Here

"The American Medical Association provides statistics showing that in the United States, 63.8 per cent of the 955,869 hospital beds are Government owned, i. e., either by the nation, states, county or city. The American Medical Association, in citing the advancement of Federal and state owned hospitals, believes that 'one may view it as a preparatory step in a civic duty in the matter of chronic cases where family financial support fails; or may view it as a preparatory step in a policy of unlimited expansion whose ultimate goal is state medicine.'

"Doctor Parran believes that as traditional forms of medical practice are abandoned it will be wise to look to the program that the British have set up.

" 'If, through evolution or revolution, we find ourselves to the extreme left and part of a socialist state tomorrow,' he says, 'then we doctors, too, will be socialists. Or, if we are not, our successors will be. State medicine will exist in the sense that the state will operate medical and health services in a manner comparable to our present system of public education.' The medical recommendations contained in the platform of the British Labor Party give at least a rough idea of what that would be like. Or, if we recognize obvious differences in the level of medicine here and in Russia at the beginning of the World War, we may find some suggestions in the medical organization of that country."

THE LURE OF MEDICAL HISTORY*

THE TUBERCULOSIS MOVEMENT IN CALIFORNIA†

By W. P. Shepard, M. D.
San Francisco

I

FOR nearly a century the control of tuberculosis has been a major problem in this state. On the twenty-second of April, 1934, sixty-four years elapsed since the California State Board of Health held its first meeting. Only one year before that, the first state board of health in the nation was formed in Massachusetts. The California Tuberculosis Association is in its thirty-fourth year. The Bureau of Tuberculosis of the State Board of Health, one of the first formed in the country, will soon be twenty years old. It is fitting, therefore, from time to time to cast up our accounts, audit them, chalk up our successes and failures, and chart our future course. Let us first examine our assets with care, that we may take the utmost advantage of them.

1. SOME 1934 ASSETS

An Enlightened Medical Profession.—In California, as in most communities, the medical profession has taken the lead in the battle against tuberculosis. There are men here today who took a leading part in the early medical discussions concerning tuberculosis in this state. There are others, but one generation removed, whose wisdom and foresight in planning and directing this movement was prophetic. In 1871, Dr. Henry Gibbons, then president of the California State Board of Health, stated that doubtless a great number dying here of tuberculosis had brought the *germs* of the disease with them. This, eleven years before Koch's announcement!

True to the conservative traditions of medicine, these men and their successors have acted slowly, exchanging opinions, gathering data, and studying the problem from all angles. Once these medical leaders had decided what was best to do, their determination was equal to their earlier conservatism. Largely as a result of their initiative, under the sponsorship of a special State Tuberculosis Commission, the county sanatorium subsidy bill was finally passed and the State Bureau of Tuberculosis was created in 1915.

The California Tuberculosis Commission came into being through an act passed by the California Legislature. Its report (State Printing Office File, No. 13387) was compiled by its Executive Committee, consisting of Dr. George H. Kress, Los Angeles, chairman; Dr. Charles C. Browning, Los

*A Twenty-Five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of California and Western Medicine. The column is one of the regular features of the Miscellany Department of California and Western Medicine, and its page number will be found on the front cover index.

† From the division of the Pacific Coast Welfare Division, Metropolitan Life Insurance Company, San Francisco.

† Presented at the annual meeting of the California Tuberculosis Association at Fresno, April 6, 1934.

Angeles; Dr. R. G. Broderick, Oakland; Mr. A. Bonnheim, Sacramento; Miss Katherine C. Felton, San Francisco; and Dr. William F. Snow, State Health Director, Sacramento. Mr. Guy P. Jones of the state health office at Sacramento acted as secretary.

That body went on record as being in favor of county and district rather than state sanatoria; of giving a state subsidy to the county sanatoria when maintained in accordance with standards laid down by the proposed bureau of tuberculosis of the California State Board of Health. These three recommendations of county sanatoria, state subsidy, and a state bureau of tuberculosis, were the direct and almost immediate results of the recommendations of the Executive Committee of the California Tuberculosis Commission. The passing years have shown the wisdom of those recommendations. The system then inaugurated by California has since been copied by other states.

Physicians were largely, one might say, entirely, responsible, too, for the formation of the California Tuberculosis Association (the original name being California Association for the Study and Prevention of Tuberculosis); and it is significant that today they take an active and interested part in guiding its affairs. I dwell on this at some length in order to impress the fact that in this, as in most public health movements, the medical leaders of the state have taken an active part. Certainly this medical participation remains today the first of our tangible assets.

An Enlightened Public.—Mr. Higby announces that, in this fourth year of our greatest depression, the California Tuberculosis Association will report the third highest amount collected through seal sales of any state in the country. According to estimates, New York State collected last year 5.5 cents per capita; Pennsylvania, 3.6 cents; and California, 3.3. The national average for last year was 2.4 cents per capita. This is incontrovertible evidence of the enlightenment of a public whose knowledge has been gained in large part from their medical advisers, and whose enthusiasm and untiring efforts have been fostered from year to year by the challenge in the task of preventing unnecessary illness and death. The entire picture of tuberculosis control in California is permeated with a happy relationship between a studious, scientific, conservative, and generous medical profession and an educated, energetic, persistent, and generous public. This is no mean item in our list of assets.

UNEXCELLED SANATORIUM SYSTEM

Since 1915, ninety per cent of the population of this state have gradually acquired access to tax-supported county sanatoria for the treatment of tuberculosis. But this is only half the story. These sanatoria are among the best in the country, thanks in large part to the system of state subsidy, the state subsidy being one of the major recommendations of the California Tuberculosis Commission. See above. In order to qualify for state support, they must meet certain minimum standards. In the biennium, 1915-1916, the state expended $75,000 for subsidy and support of local county tuberculosis sanatoria. This amount increased each year until 1931-1932, when it was $1,136,000. It is significant that, even last year, the amount appropriated by the state for this purpose was $993,040. From 1915, through 1933, a total of $5,184,000 has been appropriated by the state to assist in the medical care and rehabilitation of its tuberculous.

This state now has 5,218 beds for tuberculous patients distributed among twenty-eight public sanatoria, and thirty private and semiprivate institutions. This is exclusive of United States Government hospitals. This comes close to the Framingham standard of one bed per death. Deaths in California in 1932 were 5,027.

The significance of this system can scarcely be overestimated. In addition to restoring thousands of our citizens to health and normal lives, it has made each of these an object lesson to his friends on the advantages of modern tuberculosis prevention measures. Another result has been the development within the state, or the attraction to the state, of a group of specialists in tuberculosis treatment and control, who are second to none in the nation. These men have had a profound influence upon their medical colleagues, on the one hand, who are kept currently informed concerning the newer methods of diagnosis, treatment and control, and their lay colleagues, on the other hand, who have ready access to sound advice concerning the direction of this public health movement.

LOCAL TUBERCULOSIS ASSOCIATIONS

Partly as a result of the preceding three items of assets, we now have in this state, under the banner of the California Tuberculosis Association, sixty-two local associations, of which fifty-nine are entitled to official delegates in the state body. Fourteen of these associations have adequate full-time personnel, with excellent programs and skilled workers under the immediate direction of a combined lay and medical board.

Herein lies an enormous state-wide influence, the full implications of which have probably never been appreciated by any of us. First, this Association forms an important link in the nation-wide chain of tuberculosis safeguards. Second, it spreads throughout the state an infusion of public health consciousness. It directs public opinion to a more complete realization of the importance of public hygiene. It supports and encourages official health departments and the health activities of schools. Thus, an antituberculosis program at the same time points the way to a complete public health program. It influences legislation and political appointments. It seizes upon and puts into local use each new procedure for public health improvement which has been tested and found successful elsewhere. It elaborates its own successes, and passes them on for use by others.

Although this Association is a great power, its influence has been but gently felt in this state. It is one which may develop to guide and promote

the entire state public health policy. It could be used to an even greater extent than at present to protect local and state public health activities from political interference, to facilitate an ever greater participation of the medical profession in public health activities, to teach the wisdom that an ounce of prevention is worth a pound of cure when considering public health appropriations, to safeguard the poverty-stricken health officer, often struggling single-handed against inadequate appropriations and insufficient public support, and, finally, to pursue its present conquest to its logical and rightful conclusion: the eradication of tuberculosis as a major cause of death.

There are many other assets rightfully ours, the contemplation of which gives us well-deserved satisfaction. It is a poor business concern which does not take full advantage of all its assets. May these assets of ours never grow less, and may we, as time goes on, appreciate them and use them more completely.

(To be continued)

CLINICAL NOTES AND CASE REPORTS

PNEUMONIA COMPLICATING PREGNANCY AND LABOR

WITH BRONCHOPNEUMONIA IN THE NEWBORN

By Lindsay Peters, M. D.
Alameda

REPORT OF CASE

MRS. W., twenty-eight years, white, housewife.

Family History.—No hereditary disease.

Personal History.—Tonsillectomy twenty years ago; scarlet fever, 1926. Menstruation began at eleven years; every twenty-eight days; duration five days, moderate amount; severe pain first four hours. Married on June 24, 1931. No children. No miscarriages. Last menstruation, May 29, 1933. Expected date of confinement, March 7, 1934. Some nausea first two months. No vomiting. Except transient albuminuria, corrected by diet, the pregnancy was uncomplicated.

On March 2, 1934, about 7:30 p. m., the patient telephoned that she had had a sore throat for some days past, and she felt that the cold was going into her chest. I advised that she remain in bed and take tablets of sal ethyl carbonate, grains 5. When I saw her next morning, I learned that immediately after telephoning me the previous evening, she had a hard chill, lasting an hour, and that in spite of the sedatives I prescribed, and aspirin in addition, she spent a restless night on account of fever and pain in the left side of the chest. Her temperature was found to be 101.5 degrees Fahrenheit, pulse about 100, and she still had intense pain in the left side of the chest, but I was unable to detect signs of pneumonia or pleurisy. The chest was strapped with adhesive plaster, and two peralga tablets were given. This was followed by two hours of sleep, and when I saw her again about 12:30 p. m., her temperature was normal, pulse about 100. She then informed me that since 11 a. m. she had been having uterine contractions. This was confirmed by abdominal palpation, and rectal examination showed the cervical canal obliterated, the degree of dilatation of the external os undetermined and the head descended to mid-pelvic position. She was then sent to the Alameda Sanatorium, where she arrived about 1:30 p. m.

Physical Examination.—Teeth, good. Tonsils, removed. Cervical glands not palpable. Thyroid not enlarged. Nipples small and cupped. Heart normal. Left side of chest strapped for pain. Chest not examined on admission.

Fundus uteri, three finger-breadths below ensiform. Firm contractions at three-minute intervals. Head engaged. Small parts to right, dorsal plane to left, fetal heart low in left lower quadrant. Position, L. O. I. A.

Pelvic measurements: Sp. 26.5; cr. 28.25; tr. 31.5; bisisch. 10.5; diag. cong. undetermined, on account of inability to reach sacral promontory.

Rectal examination about 3:15 p. m. showed head low in the pelvis, but the degree of dilatation uncertain; therefore the patient was taken to the delivery room and carefully prepared for vaginal examination, which showed complete dilatation, the head almost down to the perineum; hence the membranes were ruptured with scissors. Escaping amniotic fluid contained an unusually large amount of meconium. Fetal heart sounds, heard at frequent intervals by Doctor Jackemy, were said to be good. At 3:30 p. m., for analgesia, sodium amytal, grains 9, by mouth, followed at 4:30 p. m., by scopolamin, grain 1/100, intramuscularly. Immediately after rupturing the membranes, pudendal anesthesia was produced by injection of 40 cubic centimeters 1-1000 solution of nupercain.

The head promptly came down on the perineum and began to separate the labia during contractions, but expulsive efforts were impaired by pain in the chest and, in view of the possibility of serious lung complications, low (outlet) forceps were applied without additional anesthesia; after mediolateral episiotomy the head was easily lifted over the perineum and delivery completed without difficulty at 5:18 p. m. Pituitrin, one cubic centimeter, was then given intramuscularly and after repair of the episiotomy, the placenta was expressed with some difficulty and fluid extract of ergot, dram 1, immediately given by mouth. There was little loss of blood, and the placenta and membranes appeared to be complete.

After the patient was returned to bed, restlessness and confusion, due to sodium amytal and scopolamin, continued most of the first night and cough was troublesome. Next morning, in spite of having had only about one and one-half hours of sleep, the patient was in good spirits, but examination of the chest revealed unmistakable signs of consolidation at the base of the left lung, posteriorly.

On account of the seriousness of the complication, Dr. Fletcher Taylor was asked to see her in consultation and made the following recommendations: At least 3000 cubic centimeters fluids, containing 2000 calories daily, with addition of salt. For pain, amidopyrin with amytal and codein, grain one-half. Enemas to be given with Y-tube. Watch urine and leukocyte count; oxygen tent; continue diathermy.

Sputum was sent to the laboratory the first day after delivery, but no pneumococci could be isolated, only a nonhemolytic streptococcus and *Staphylococcus albus* being found.

The third day after delivery, a blood culture was made, and seven days later it showed a pure culture of nonhemolytic streptococcus. The only other laboratory reports of interest were the blood counts, showing a surprising degree of anemia and a rather low leukocyte count.

There was a rapid extension of the pneumonic process upward in the left lung, and on the third day postpartum crepitant râles were heard at the right base. The next day, both lobes of the right lung and the left, upper lobe showed bronchial breathing; coincident with this was a clearing up of the original focus at the left base.

The fatal termination on the fifth day postpartum was preceded by wild delirium, ending in coma.

The baby, a boy, weighing seven pounds two ounces, cried promptly, had a good color, and appeared normal. He was given the Kugelmass hydrating formula every two hours from birth for three days, after which an evaporated milk formula was given.

About nineteen hours after birth the floor nurse found the baby taking its formula from a bottle while lying down, and noticed fluid running out of its nose. On taking the baby into her arms to feed it, fluid continued to escape from the nose and cyanosis was noticed. The nurse also observed that the baby trembled, as with a chill. Doctor Jackemy, house surgeon, was called and gave oxygen.

When I examined the infant about 4 p. m., there was slight cyanosis, and on auscultation of its chest at first no breath sounds were heard over the left base posteriorly, but soon afterward there was a respiratory murmur of higher pitch than on the right side. About 9 p. m. Dr. M. L. Cohn of San Francisco saw the baby in consultation. He found it "in good condition, although with some alteration of respiratory sounds on the left side." He advised 75 cubic centimeters of normal salt solution by hyperdermoclysis two or three times daily, and the foot of the crib elevated.

After five days of pyrexia, the highest temperature being 103.4 degrees Fahrenheit, the temperature became normal and has remained so. Clinical signs of bronchopneumonia were confirmed by x-ray on March 5 and March 9, and the left lung, in which clinical signs were the more pronounced, was obscured by the heart shadows in all the films. After the first day of illness there was no more cyanosis. There has been a good gain in weight, and the baby now appears comfortable and normal.

NOTES ON LITERATURE

From a review of available literature, I have compiled the following notes:

Pneumonia is an infrequent complication of pregnancy, occuring once in about 769 cases (Schmitt).

The more advanced the pregnancy when labor sets in, the greater the probability that pregnancy will be interrupted and the higher the maternal mortality. It interrupts the pregnancy in about two-thirds of all cases (Greenhill) and, according to Cragin, pregnancy is interrupted in about 40 per cent of the cases during the first half of pregnancy, and 60 per cent during the second half.

Vinay collected cases which showed a maternal mortality of 68 per cent when pregnancy was interrupted, and only 15 per cent when it continued undisturbed. Termination of labor does not help the pulmonary affliction, but, on the contrary, it makes the prognosis worse; hence labor should never be induced. If labor occurs, delivery should be accomplished as quickly as possible. The second stage can usually be eliminated by the use of forceps. Local anesthesia should be used when an anesthetic is necessary, because a general anesthetic nearly always adds to the mother's risk. When pneumonia develops during the last days of pregnancy or early in the puerperium, it is not unusual for pneumococci to be transmitted by means of the blood stream to the uterus, where they give rise to hematogenous puerperal infection.

Concerning the frequent interruption of pregnancy by a complicating pneumonia, Williams says that this is generally attributed to imperfect oxygenation of the fetal blood, although it is frequently due to the direct transmission of bacteria to the fetus, in whose organs pneumococci have been demonstrated by various observers. De Lee says, concerning the fetus, that its chances are generally not good, though Fellner quotes nineteen cases of Schautas' clinic with only one death.

Scanning the literature, one is impressed with the scarcity of statistics from the large obstetrical centers dealing with this formidable complication of pregnancy and labor, showing how frequently it occurs, and its effects upon mother and offspring. The few such references found are from European sources.

COMMENT

Four or five days after the beginning of a "sore throat" the onset of pneumonia, with a long, hard chill, followed by fever and pain in the left side of the chest, occurred in a 28-year-old primigravida on the fifth day prior to the calculated date of full term. Labor began fifteen hours after the chill and was completed six and one-half hours later, with little suffering except from chest pain, with no inhalation anesthesia, adequate analgesia and amnesia being accomplished by sodium amytal, grains 9, by mouth, followed by scopolamin, grain 1/100, intramuscularly, and pudendal anesthesia. No additional anesthetic was required to permit episiotomy and low forceps delivery as soon as the head was well down on the perineum.

In the sputum sent for typing, no pneumococci were isolated, only nonhemolytic streptococcus and a staphylococcus. Blood culture taken on the third day postpartum gave a growth of nonhemolytic streptococcus only. Poor constitutional resistance to the infection is suggested by an early drop of the initial, marked leukocytosis. There were no symptoms suggesting uterine infection.

With regard to treatment: Diathermy appeared to be of real value for the comfort of the patient, if not for combating the infection. The patient welcomed the treatments and said they gave her comfort. During the treatments dyspnea was less, rhonchi fewer and cough less. The use of the oxygen tent lessened dyspnea and cyanosis, but the cooled gas appeared to aggravate the coughing, and this seemed to me to offset its benefits to a great extent.

Owing to the failure to find pneumococci in the sputum, pneumococcus serum was not used and the correctness of this course was apparently verified by the later finding of a pure culture of nonhemolytic streptococcus in the blood identical with that found in the sputum.

In the light of the recent articles pointing out the possible serious effects of employing drugs derived from a benzene radicle, such as barbiturates and amidopyrin, which may be capable of depressing the mechanism of leukocytosis, I shall in future hesitate to make use of these drugs in the presence of a serious infection.

Blood transfusion was considered and thought to be inadvisable.

The writer thinks the baby's constant gain in weight can be fairly credited to the Kugelmass hydrating formula and salt solution by hypodermoclysis.

The case brings up two questions of especial interest:

1. Concerning the pneumonia in the mother: was it an ordinary lobar pneumonia, due to the pneumococcus, or was it a metastatic streptococcus infection from the throat? Strongly favoring the latter idea are the facts that an acute "sore throat" immediately preceded the onset of pneumonia, that pneumococcus was not found in the sputum, and that a nonhemolytic streptococcus was found both in the sputum and the blood culture. However, since only one sputum specimen was obtainable for examination, one cannot say that pneumococcus might not have been found had other specimens of sputum been available for examination.

2. Concerning the bronchopneumonia in the newborn: was it a blood-borne, prenatal infection, an air-borne infection from the mother, or was it due to aspiration of feeding fluid into the lungs? The idea of prenatal infection is supported by the unusually large amount of meconium in the amniotic fluid, suggesting prenatal distress of the child, and the short interval between birth and the onset of symptoms of bronchopneumonia.

Aspiration of amniotic fluid into the child's lungs, a frequent cause of pneumonia in the newborn when there is much delay in delivery following rupture of the membranes, does not seem probable, because delivery followed promptly the artificial rupture of the membranes when the head was on the pelvic floor.

1361 Park Street.

DIAGNOSTIC HINTS IN ANORECTAL DISEASES

By A. H. Weitkamp, M. D.
Los Angeles

ALTHOUGH a very considerable part of the human race is subject to some form or other of anorectal disease, yet in the past but little time, if any, has been given to this field by our medical schools. A new proctologic consciousness is now being manifested in many circles, but the lack of such necessary early training by the general practitioner makes it often difficult to reach a conclusion as to the trouble here. To help out in this dilemma, the following diagnostic hints and suggestions are given:

1. Be not too hasty to accept the patient's diagnosis of his anorectal symptoms as "piles." There are many other conditions in this region which may account for the difficulty besides hemorrhoids.

2. To know anorectal diseases, learn definitely to identify the anorectal line, undoubtedly the most significant landmark in the whole field of proctology; since at or about this juncture is to be found the greater part of all anorectal pathology. On this line are to be found the hypertrophied papilla. Above this line lie the internal hemorrhoids, the crypts which often become inflamed, the internal opening of most of the fistulous tracts, as also the likely seat of entrance of the infection which causes the formation of the ischiorectal and other types of abscesses of this region. Below this line are to be found the anal fissures, ulcers, and external hemorrhoids.

This anorectal line, then, is the place of juncture of the skin from the exterior with the mucous membrane of the rectum. It is variously located at about one-half to one and a half inches above the external margin of the anus.

3. The story of severe pain is always sure to indicate the fact that the pathology is below, or external to the anorectal line, as here alone are the sensory nerves to be found.

4. Do not be deceived by the fact that no symptoms are given as to the rectum. There being no sensory nerves above the anorectal line, this is made a silent zone, and serious pathology, even malignancies, may develop here without any indication of their presence.

5. Listen carefully to the patient's anorectal symptoms. It may give hints of some condition other than the pathology first discovered in your examination.

6. Having heard the patient's story, do not accept this as a final basis for diagnosis. Be sure to follow this up with an examination consisting of an external inspection, a digital palpation of the anorectal canal, as also an examination with at least an anoscope. Each of these methods add something that the others cannot give.

7. Severe pain, produced by the attempt to pass the anointed finger into the anal canal, almost always indicates an acute anal fissure.

8. Ninety per cent of anorectal malignancies can be reached by the palpating finger in the canal.

9. Blood passed with or without stool does not necessarily indicate hemorrhoids. It may indeed mean this, but it may also be a sign of fissure, ulcer, proctitis, colitis, stricture, intussusception or neoplasm, either benign or malignant.

10. Tags surrounding the anus are a sign of past troubles, with the possibility of still existing pathology above the anorectal line. Search for it.

11. A papule-appearing elevation from which pus may be expressed, and located within two inches of the anus, is in all probability the external opening of a fistulous tract.

12. Ever and anon disorders of the terminal end of the gastro-intestinal tract refer their symptoms to neighboring organs of the pelvis. Reversely, diseases of the pelvic genito-urinary system may only manifest themselves by signs referable to the anorectal region.

13. Sacral backaches are often due to pelvic disturbances, either rectal or genito-urinary.

14. Unexplained gastro-intestinal disorders at times find their cause in pathology of the anorectal region.

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IS ENDOCRINOLOGY A NEW DEVELOPMENT?

By F. E. Blaisdell, Jr., M. D.
Watsonville

THE purpose of this article is to call attention to certain statements made in an extremely interesting and fascinating book, "The Children of Mu," by James Churchward.[1] I consider the quotation to be given of utmost importance, because, if authentic, it must occupy an important place in the history of medicine, and especially of endocrinology. The author of this book admits that the translation was extremely difficult, but he feels that all the essential details are right. Coming from a non-medical man, presumably not versed in modern endocrinology, it is difficult for me to conceive how such an interpretation could have been arrived at unless authentic. We must allow for the difficulty in choosing words to convey what the old Nascals may have meant, but the end-result certainly has a modern endocrine flavor. The reader may consult for himself the book and draw his own conclusions.

In the chapter dealing with "Stone Tablets from Mexico Valley" there are two paragraphs on "Color of Men's Skins," which are Mr. Churchward's translation of what the old Nascals were supposed to have said on this subject hundreds and hundreds of years ago. I offer the following quotation taken from pages 50-51, an extract from the Nascal writing as to "The Origin of Life and What Life Is":

"The cause and causes which have been instrumental in causing the color of men's skins to change are various, but the principal cause has been the unbalancing between the Life Force and the elementary compounds forming the skin. This unbalancing was the result of an over or an under stimulation of the glands which carry the Life Force in its secretion through the blood to the various parts of the body, including the skin. Each gland controls certain parts of the body and each gland has a normal volume of the Force which it causes. The secretions of the glands are governed by the character of the food, so that the food may produce either a surplus or a shortage of the Force used by a certain gland—in turn the Force carried by its secretions may either underbalance or overbalance the elementary compound it is controlling, resulting in irregularities of form or color or both in the elementary compound.

"The Life Force excites the cells to do their work. When there is an overplus of the Force the cells are unduly excited and work too fast and, on the contrary, when there is an unsufficient volume of the Force to form a balance, there are irregularities. The principal irregularities in man caused by these vital unbalancings are: size of body, character of hair, color of skin and sometimes change of features. The general cause of vital unbalancing is: character of food, combined with temperature."

Barring modern terminology, I do not think that the average medical man could give a much better discourse on this same subject. Remember that the above was written, presumably, hundreds of years ago.

[1] The Children of Mu. By James Churchward. Ives Washbrun, publisher, New York. 1931.

Comparison of Tuberculin Tests.—Aronson and his associates made a study of the relative sensitiveness of the Pirquet and the intracutaneous tuberculin tests in determining the incidence of tuberculous infection. For this purpose two large groups of white school children near Boston were tested simultaneously by the two methods. Of the children between the ages of five to nineteen years who failed to react to the Pirquet test, from 1.5 to 3.9 per cent, with an average of 2.9 per cent, reacted to 0.01 milligram of tuberculin. When one milligram of tuberculin was employed, the total of those who failed to react to the Pirquet test but reacted to the intracutaneous test ranged from 14.2 to 28.4 per cent, with an average of 19.1 per cent. The total of those who reacted to the intracutaneous test and not to the Pirquet test yielded a negligible increase in the amount of infection detected by this means. Those who failed to react to the Pirquet test, from 17.8 to 30 per cent, with an average of 22 per cent, reacted to the intracutaneous test with tuberculin. Repetition of the Pirquet test yielded a negligible increase in the amount of infection detected by this means. These observations were compared with two previous surveys of white school children, one made in Massachusetts with the Pirquet test, and the other made in Philadelphia with the intracutaneous test, which showed a higher incidence of infection in Philadelphia. Children in schools near Boston were found to have tuberculous infection less frequently than public school children in other parts of Massachusetts. In an institution near Boston the incidence of infection was higher than that of public school children. It was found that a mathematical factor, a "correction figure," could not be devised to convert results obtained by the one method into those obtained by the other.—*Amer. Rev. Tuberculosis.*

Loss of Weight in the Newborn.—Kugelmass and his associates point out that the initial loss in weight in the newborn can be prevented by the oral administration of a solution consisting of 6 per cent gelatin (*p*H 6.2), 3 per cent dextrose, and 0.5 per cent sodium chlorid at intervals of two hours throughout the twenty-four-hour cycle immediately after birth. The characteristic clinical picture of the newborn is a result of birth shock and is more effectively combated by a hydrating solution than by milk mixtures during the first two or three days of life. The total fluid intake of the newborn, properly conditioned to both the breast and the bottle, was as much as twice that of the series receiving the routine nursery care. Preventing the loss of weight in the newborn produces rapid disappearance of the so-called physiologic apathy, somnolence and stupor secondary to birth shock and the compensated acidosis universally present. The newborn infant shows a hypoglycemia during the first days of life and a sugar tolerance curve of low peak, thus indicating a dire need for carbohydrate as well as a tendency to utilize, store and exhaust their endogenous supply of carbohydrate more rapidly than older children. Determinations of the refractive index and viscosity of the serum of the newborn revealed the concentration of the blood on the first days of life, gradually attaining normal values following administration of food in the control series; but the newborn treated with the hydrating solution showed a markedly constant course for both refractive and viscosimetric curves. The gelatin component of the hydrating solution decreased the clotting time to less than three minutes, in comparison with seven minutes in the control series.—*American Journal of Obstetrics and Gynecology.*

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

ENDOCERVICITIS

R. Glenn Craig, M. D. (490 Post Street, San Francisco).—*Etiology and Pathology.* Endocervicitis, as the word is commonly used, refers to infection of the glands of the cervix. In the normal nulliparous cervix, the squamous epithelium which lines the vagina extends over the external or exposed portion of the cervix and for a short distance up the cervical canal, sometimes a third or half the distance from the external os to the internal os. This stratified squamous epithelium is the same as that of the skin, with the exception that it does not contain hair follicles or sweat glands. Most infections of the skin begin either in the sweat glands or hair follicles, and because of their absence, the squamous epithelial covering the cervix affords a better protection against external infection than the skin. When this squamous epithelium does not completely cover the exposed portion of the cervix, the columna epithelium lining the cervix and the cervical glands are exposed to infection from the vaginal bacterial flora, and they offer very little resistance to infection. When this condition exists, the cervix gives a red, shiny appearance, rather than the white, shiny appearance of the squamous epithelium. For this reason it has been erroneously called an erosion. Erosions are uncommon, as it is unusual for an ulceration or absence of the epithelium layer to exist. It is, perhaps, better called an ectropion or eversion of the cervical mucosa. Infection of the cervical glands may occur high up in the cervix, despite the presence of a satisfactory covering of squamous epithelium.

In a nulliparous woman, there may be an insufficient amount of squamous epithelium covering the cervix, with the resultant infection of the cervical glands from the ordinary bacteria of the vaginal flora, resulting in an increased irritation with excessive glandular secretions and the clinical symptom of leukorrhea. Gonococcal infections usually involve the cervix, and because of the racemose type of gland present, are most persistent in this location. Either specific or non-specific infections of these glands may occur with a sufficient amount of squamous epithelium present.

The most common type of endocervicitis is that present in multiparous women. The causative organism is usually a non-specific organism from the bacteria flora, commonly the Bacillus coli. The birth of the child, with the passage of the head down through the cervical canal, results in an eversion or ectropian, or pushing out, of the cervical mucosa, thus making an infection of the glands easy and frequent. For this reason leukorrhea following childbirth is so common that it is usually considered by women to be a normal condition.

A chronic irritation, produced by the persistent infection, causes overstimulation of the glands and an excessive secretion of mucus material usually containing polymorphonuclear leukocytes. It is becoming more and more firmly established that carcinomata arise in areas where a chronic irritation is maintained over a long period of time. It is also believed that the most common site of a squamous cell carcinoma is at a mucocutaneous junction. Carcinoma of the cervix is one of the most important types of "cancer" in women, and it is believed that the chronic irritation at the muco-cutaneous junction presents a major factor in the etiology of the squamous cell cancer of the cervix, particularly if there is a familial predisposition to cancer. The evidence is accumulating that a cervix properly cared for after childbirth rarely develops carcinoma of the cervix. For this reason it is believed that more attention to chronic infection of the cervix, or endocervicitis, is essential if we are properly to take care of our patients and to lower the incidence of this type of carcinoma. In any case, the patient is usually grateful for being relieved of her symptom of leukorrhea.

All efforts in the treatment of this condition are directed toward the removal or destruction of the infected cervical glands and covering completely the exposed portion of the cervix with the infection-resistant stratified squamous epithelium. The same purpose may be accomplished with the actual electric cautery, electrocoagulation or the Sturmdorff amputation of the cervix. It would be much better if the physician who takes care of a patient during childbirth would see that she is left with an uninfected cervix well covered with stratified squamous epithelium. The use of a small nasal wire cautery tip applied two or three months after the birth of the child accomplishes this purpose most satisfactorily. The same procedure can be carried out if there is a congenital insufficient covering of the cervix with the stratified squamous epithelium.

* * *

H. N. Shaw, M. D. (901 Pacific Mutual Building, Los Angeles).—*Symptoms and Diagnosis.* Endocervicitis is considered one of the most common and potent causes of cancer of the cervix. It occurs most commonly as a result of gonorrheal or nonspecific infection of the mucosa and cervical glands. Some degree of laceration is inevitable in delivery, and such an injury renders the cervical mucosa and glands liable to a low-grade inflammation. The inflammation of the endocervix causes a rolling out and eversion of the mucosa. This occurs in the nulliparous cervix also, as the only direction in which the swollen tissue can expand.

The most common symptom is a profuse, glairy, mucous or mucopurulent discharge. This may or may not be irritating, causing an inflammation of the adjacent parts. It varies in color, depending on the causative organism; occasionally it is blood-streaked. Bloody discharge is suggestive of the very rare tuberculous infection, but beginning cancer must also be ruled out. A symptom often complained of is a sense of bearing down, or weight, in the pelvis.

Diagnosis.—The examining finger feels a soft, cushiony surface, often with hypertrophy of the entire cervix. On inspection with the speculum, one sees a swollen, everted mucosa covered with mucus or mucopus. There may be ulcers or, where larger amounts of tissue have sloughed, true erosions.

The gonococcus should always be suspected. Unfortunately, the smears may not demonstrate the organisms, as they may be closed off in the deep racemose glands. Sometimes they may be demonstrated by making smears immediately after the close of a menstrual period, or by lightly cauterizing with a Post cautery, and making smears the following day. Ulcers should be examined for Spirochaete pallida by darkfield preparations, as 1.5 to 2 per cent of primary luetic lesions occur on the cervix. Primary tuberculosis is very rare, probably due to direct implantation in coitus. It may cause scattered ulcers, tubercles or excessive granulation tissue. It should be suspected when the tissue removed for biopsy is unusually firm.

* * *

George Joyce Hall, M. D. (1127 Eleventh Street, Sacramento).—*Treatment.* The predisposing and causative factors entering into the question of endocervicitis make it necessary to consider both mechanical and bacterial involvements in planning treatment, so that the various methods of treatment in use today include, first, medical and topical applications; second, surgical repair or removal of abnormal tissue; and third, the use of heat as available in the actual cautery, "electric knife," or diathermy destructive applicator.

I will admit that there is often need of vitamin, hormone and calcium therapy, and that the general blood picture is not just as we would like it; but in this short discussion only the local methods of treatment will be considered.

Medical and Tropical Applications.—In preparing the field for local treatment, we use one of the digestant powders or solutions to clear away the thick tenacious mucus; either caroid, lactopeptin or peptenzyme powder used in atomizers. This is followed by plain water and thorough drying, when there results a clean surface of cervix and vagina. Then any of the germicidal solutions, including metaphen, hexylresorcinol, merthiolate, acriflavine, mercurochrome or Berwick's bacteriostatic solution may be used on swabs, or preferably through an atomizer. Each of these has its advocates, and all are quite helpful. Placing any of these solutions in the cervical canal, however, is only a temporary measure, and irrespective of the "penetration" qualities claimed for them, we know by years of experience that they do not cure the condition. The foreign protein therapy has been disappointing.

Surgical Treatment.—The large congested lacerated cervix with extensive eversion responds well to the classical Sturmdorf tracheloplasty. This is an excellent method: is easily done, the patient is very comfortable and the results should be uniformly excellent. In my opinion, however, this requires a longer period of rest in bed after operation than some of the other methods. In this type of case the treatment is greatly simplified by surgically removing the cone of diseased tissue and cauterizing or electrocoagulating the resultant raw surface, instead of doing the classical Sturmdorf suturing.

I consider cervical amputation so rarely indicated that it deserves no place in this short résumé of treatment.

Cautery, Diathermy and Radio Knife.—All of these may well be classified as surgical methods, but are grouped separately for convenience of discussion.

The use of the actual cautery is to me the method of choice. My series of cases goes back to 1921, at which time I began using the post cautery very, very carefully—at first with a general anesthetic, and later with local anesthesia or none at all. The mild case of endocervicitis without severe laceration is treated entirely as an office procedure and rarely need an anesthetic be used.

The technique includes the preparation of the field as mentioned above. Then the large Percy, or post cautery, is inserted cold into the cervical canal up to the internal os; is withdrawn slightly, and the electric current turned on. Patients who have passed through a normal labor will uncomplainingly permit the cautery to remain for the period of time required; but those who are very sensitive are prepared by using a few cocain crystals in the cervical canal, or solutions of novocain or nupercain on applicators. Usually it requires less than one minute to cause a whitening of the visible tissue surrounding the cautery, and at about this time the cautery can be removed. There will be noticed a whitish covering of the cautery which is, of course, the superficial layers of the cervical mucous membrane. No effort is made to burn long enough to get charring; this is not necessary in these office treatments, and often this one application of heat is sufficient.

It generally requires from two to four weeks for healing to be complete. As a consequence, if given a choice, we prefer cauterizing a few days after menstruation has ceased.

In the type of case that would require a Sturmdorf tracheloplasty, a general anesthetic is used. The cylindrical water cooled vaginal specula of various sizes are very helpful in protecting the vaginal walls, although the speculum and retractors may be used safely. The vaginal speculum presented last year by E. F. McLaughlin of Philadelphia seems to me to be the most rational one yet devised for this purpose. If two cautery outfits are available it hastens the work because the tip cools rapidly in doing the deep destruction. An effort is made to destroy the same amount of tissue as would have been done with a knife in the

Sturmdorf technique. This is really very rapidly accomplished, and no effort is made to close over the raw surface resulting.

The very hot cautery, if permitted to remain in the cervical canal too long, causes a great deal of steam to be formed and a portion of this naturally enters the uterine cavity, so that one may easily visualize much damage that might be done to the endometrium and tubal epithelium if the operator is not cautious. We remove the cautery completely every few seconds. Someone has devised an ingenious cautery, with a canal in the center, which is supposed to permit the steam to come out if under too much pressure. I have had no experience with it.

It seems proper to mention here the method of "striping" with the nasal cautery so frequently mentioned in literature. I consider this method unsurgical, unsatisfactory and incomplete. The percentage of cures is so low that it is entirely unjustified whether the actual cautery or some form of "electric knife" is used.

Some operators object to the actual cautery because of the undetermined penetration of heat and the length of time required. This is due, of course, to lack of experience.

In one of my early cases there was an epithelization of the external os found at the beginning of the menstrual period three weeks later. This was easily punctured with a sound and no further disturbance occurred. There have been no other strictures found in my series in twelve years.

After cauterization there is a gradual sloughing of the destroyed deeper layers, and our patients are permitted to use daily, cold, normal saline douches. During healing there is a contracting, shrinking effect which "puckers" the cervix until it becomes normal in size and appearance. No method of using a knife gives as normal appearing results as does the actual cautery.

"Electric Knife."—This long, needle-like instrument may be used to obtain a very pretty removal of the same amount of tissue as is done in Sturmdorf's tracheloplasty. But if a "cuff" is not prepared to permit epithelization, no effort should be made to cover over the raw surface; rather, it should be left as is done with the cauterization, and will leave a small rounded cervix rather than a nodular one which would naturally follow any effort to suture.

Electro-coagulation.—Various electrodes have been made to use on different electrosurgical or diathermy units for the purpose of destroying the abnormal tissue in the cervical canal. This method, when properly carried out with an applicator that "fills" the cervical canal, will give almost universally good results. It, again, is simple and may be used as an office procedure as described in the cautery technique.

Conization of the Uterine Cervix.—Hyams' development of this method, considered by many a great improvement over the uncontrolled cautery and coagulation destruction, is truly a nice procedure. His technique is simple and the results are excellent. There is more bleeding after conization than after cauterization, and there is also the occasional failure to destroy all of the infected glands, which requires a repetition at a later date; but such things should not prevent the operator from becoming experienced with any and all methods so that he can better choose the modality which might seem indicated in any individual case. No one method, in my opinion, is indicated in all types of cases.

Prognosis.—Endocervicitis is curable, whatever the cause may be. The time-duration under treatment varies with the etiological organism and the acuteness or chronicity of the inflammation. The above-mentioned methods of treatment shorten the time very materially. The diseased tissue must all be removed. If the adjacent portions of the genital canal are not also involved, healing will take place in from ten days to four weeks, and the cure is accomplished.

Submitted for publication, August, 1933.

The Title of Doctor of Medicine in Danger. — In France, the title of doctor is bestowed by the facultés de lettres, the facultés de droit and the facultés de sciences, as well as by the facultés de médecine. But in current speech the title doctor is commonly reserved to doctors of medicine. When one speaks of doctor, without further qualification, only a physician is meant. For this reason, persons desiring to practice medicine illegally always seek to procure a doctor's title given by some other institution in order to create confusion in the public mind. The pharmacists, most of whom prescribe illegally to the public frequenting their shops, have finally succeeded in getting a doctor's diploma established, with which they make considerable showing before their clientele. But the law requires them to state plainly that they are doctors of pharmacy. There are also doctors of veterinary medicine, some of whom likewise seek to deceive the public. The diploma of veterinarians must, however, be bestowed by a faculté de médicine before an examining board comprising professors of physiology, bacteriology, hygiene and materia medica, together with professors of a recognized large veterinary school. Here, too, the law requires that the holder of the veterinary title shall announce himself as a "doctor of veterinary medicine"; but that fact does not prevent him, if occasion arises, from giving consultations to the public, which applies to him the term "doctor." The dentists who have not pursued medical studies are also seeking to get a doctorate of dental science established, but this far the dentist-physicians have succeeded in preventing this and have suggested that, on the contrary, the practice of odontology be reserved solely to doctors of medicine who have received special supplementary instruction. The syndicates of the dentist-physicians and the syndicates of the nonmedical dentists are at loggerheads, both having powerful political allies, while the minister has not found it convenient to tackle the question. More serious trouble has arisen. A group of practitioners of dental electroradiology has established a technical school, which also is granting a doctor's diploma, and the holders, without having pursued medical studies, can easily practice medicine illegally by treating patients directly, without the latter having been so much as seen by a doctor of medicine, as the law requires. The medical syndicates have protested against this growing abuse; but not only does the minister fail to take account of their protests, but the syndicate of the dental radiologists even went so far as to organize an official dedication of the school, at which the various ministers, the municipal council of Paris, and the prefect of police, not comprehending the situation, were represented by delegates, who delivered a number of addresses in praise of the new institution and the services it was rendering the people. Thus, in France, they simply encouraged the illegal practice of medicine.—*News Letter, J. A. M. A.,* Vol. 101, No. 12.

California and Western Medicine
Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California and Nevada Medical Associations
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
Telephone Douglas 0062
Address editorial communications to Dr. George H. Kress as per above address; advertising and business communications to the Secretary-Treasurer, Dr. Emma W. Pope, also at the above address.

EDITOR . . . . . GEORGE H. KRESS
Associate Editor for California . . . . EMMA W. POPE
Associate Editor for Nevada . . . HORACE J. BROWN

Advertising Representative for Northern California
L. J. FLYNN, 544 Market Street, San Francisco (DO 0577)
Advertising Representative for Southern California
A. GUTTMAN, 1925 Wilshire Blvd., Los Angeles (VA 1221)

Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

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Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication.— California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS*

THIS YEAR'S POLIOMYELITIS EPIDEMIC

Peak of the Epidemic Has Been Passed.†—In last month's issue of CALIFORNIA AND WESTERN MEDICINE, considerable space was given to a presentation of facts and figures concerning the outbreak of poliomyelitis which this year first manifested itself in the southern part of the State. It is gratifying, therefore, to report that the peak of the epidemic in the territory around Los Angeles has been passed, and that the morbidity statistics from northern portions of the State indicate that no such outbreak may be expected there. Equally pleasing are the facts that the mortality rate is lower than in previous epidemics, and that the paralysis associated with the disease is of a less severe nature than heretofore.

* * *

The Good Results a Tribute to the Excellent Work of the Medical Profession.—It is generally conceded that, in large part, some of these beneficent results have been due to the efficient service rendered by members of the medical profession, both in private practice and in public health agencies. Early diagnosis and proper treatment are important factors to be taken into account, if poliomyelitis morbidity, with its possible sequelae of disabling paralyses and mortality, are to be held in check. Special credit must be awarded, then, to all those physicians, nurses and others who, in the present epidemic, have given of themselves without thought of self. Here and there, some of such have paid the price of this altruistic service in themselves becoming victims, either of poliomyelitis itself, or of other conditions brought on through overwork in trying to check the ravages of the disease. It is to be hoped that all who have thus generously served, often to the point of that fatigue which predisposed them to infection or to other ailments, will come through the epidemic without serious disablement.

* * *

Present Statistics of Epidemic Poliomyelitis in California.—It may be of interest to append here some paragraphs from a recent issue of the official bulletin of the California State Board of Health, wherein, under date of June 30, in a discussion as to the "Present Status of Epidemic Poliomyelitis," it is stated:

"From the first of January, 1934, to June 23, 1934, inclusive, 1,333 cases of epidemic poliomyelitis have been reported in California. Of this number, 345 occurred during the last week of the period covered by these statistics. Out of the total number of 1,333, 959 cases have been reported from Los Angeles County, 106 from Alameda County, 66 from San Francisco, and the remaining 202 cases have been scattered over twenty-six counties of the State. There are indications now, however, that the epidemic may have reached its peak in Los Angeles County, where its prevalence has been concentrated during the past few weeks. There is some significance in the fact that during the week ending June 23 increased numbers of cases have been reported from several counties in the northern part of the State. Since the 1934 outbreak has appeared earlier in the year than any other similar outbreak in California, it is not possible to predict its future course. If it follows established precedents, more cases will continue to occur in northern California.

"It is doubtful that any other outbreak of epidemic poliomyelitis has received such intensive and concentrated effort for control. The medical profession has coöperated with health officials in the provision of every known attribute that might be of value. Service clubs, philanthropic individuals, nursing and civic organizations have contributed valiantly in the emergency. While it is true that not as much as is desirable is known regarding this disastrous disease, it cannot be said that any official concerned has been negligent in his attempt to check the spread of the outbreak, to prevent the disabling paralyses that occur in many cases, and to provide all available facilities for care and treatment. It is unfortunate that this disease should cause such unbounded terror, but the human element involved inspires more than a wholesome fear of the infection. The fact that so little is known concerning it adds to the fear of the disease.

"As compared with previous epidemics it would appear that the 1934 outbreak will bring the largest number of cases that have ever been reported during a single year. At the present time, however, it would appear that most of these cases are mild in character and that the fatality rate will be comparatively low. It is probable that a very large number of the reported cases are of the abortive type. Reporting of cases has been exceptionally thorough, and it is believed that careful histories have been taken in all

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

† See, also, in this issue, page 143, for statistical information received after these comments were written.

cases reported. The study of the outbreak in its entirety, it is believed, will provide valuable information relative to the epidemiology and treatment of the disease. The research work being undertaken in Los Angeles by the Rockefeller Institute, the work of the Hooper Foundation for Medical Research in San Francisco, and by Senior Surgeon Leake of the United States Public Health Service in California, will undoubtedly provide distinct contributions to our knowledge relative to the disease.

"The incidence of epidemic poliomyelitis in California by years since 1920 is as follows:

Years	*Cases*
1920	75
1921	283
1922	62
1923	251
1924	192
1925	821
1926	187
1927	1298
1928	303
1929	171
1930	1903
1931	292
1932	191
1933	170
1934 (first seven months only)	2666*"

* * *

Treatment of Poliomyelitis in the Convalescent Period.—The July 7 "Bulletin of the California State Board of Health" contains a brief article by Dr. John Ruhrah of Baltimore, who, on a visit to California last year, addressed a number of medical societies, and, himself a past victim of the disease, now speaks with a first-hand knowledge. His high position in the profession gives to his advice an added importance, and from his comments the following quotations are made:

"The acute stage is generally reckoned to the end of the tenderness on touching unless this should be unduly prolonged, as it is in some instances, and lasts through the period during which spontaneous improvement is supposed to take place; that is, for about two years. This is an important period, for in it the patient may be greatly helped or greatly harmed. The patient should be under medical supervision; and if there are state or city nurses visiting such cases, the patient should be on the list unless it is certain everything possible is being done, and there is a surprising and lamentable ignorance on this point. Many patients are neglected and horrible contractions and deformities result.

"When to get the patient out of bed is a question on which there are differences of opinion, and each case must be considered on its own merits. From four to eight weeks' complete rest in bed are ordinary periods. Then, if there is not too much paralysis, the patient may be lifted out of bed into a chair. *The patient should never be allowed to fatigue himself.* At first the periods out of bed should be short, and gradually increased according to the gain in strength. . . .

"Contractions are to be prevented from the outset by properly fitting casts or other appliances and by passive motions; that is, exercise done by the operator without effort on the part of the patient and also by stretching. Stretching is best done by an expert, as it is a matter requiring skill and knowledge. . . .

"The treatment during the convalescent stage consists of: Constant medical supervision; rest; hydrotherapy; the stretching of contractions; the prevention of deformities; massage; muscle training by experts, best carried out in water.

"Remember that the chances for improvement, with expert daily treatment is 6 to 1; with supervised home exercises, 3.1 to 1; without supervision, 2.8 to 1. (Figures from Lovett and Martin.)"

* For figures by counties, see page 143 in this issue.

THE "NEEDY BLIND"—CALIFORNIA'S PROCEDURE AND COSTS

Assembly Bill 510 (Chapter 882), approved by Governor Rolph of California on June 15, 1931, was an Act entitled "An act to provide for needy blind persons, not inmates of any institution supported in whole or in part by the State or any of its political subdivisions, making appropriation therefor.". . . .

* * *

The Increase in State and County Expenditures on Behalf of the Needy Blind.—According to Section 1 of the Act, the State can appropriate up to three hundred dollars annually for each needy blind citizen, the sums so allotted being met by appropriations of equal amounts from county funds. A "needy" blind person can therefore receive a total of six hundred dollars yearly from public funds.

How the public moneys thus expended have increased in the last four years is shown by the State records, as given to the editor of CALIFORNIA AND MEDICINE by the chief of the Division of the Blind of the California Department of Social Welfare:

Fiscal Year	Dates	Amount (State Aid Only)	Number of Persons	Total Amount Aid (State Plus County)
81st	8/14/29 to 6/30/30	$130,664.84	1,182	$261,329.68
82nd	7/1/30 to 6/30/31	263,514.44	1,512	527,028.88
83rd	7/1/31 to 6/30/32	340,480.87	1,925	680,961.74
84th	7/1/32 to 6/30/33	435,361.99	2,284	870,723.98

* * *

The Act's Definition of a Needy Blind Person. Section 2 of the Act explains who is a "needy blind person." We quote:

"Sec. 2. As used in this act, the term 'needy blind person' shall be construed to mean any person who by reason of loss or impairment of eyesight is of such condition that he is unable to provide himself with the necessities of life and who has not sufficient income of his own to maintain himself as further set forth in Section 5 of this act."

* * *

California Department of Public Welfare Administers the Act.—In order to receive aid under the Act, an applicant, through the county clerk, must file his application with the County Board of Supervisors, which board decides whether the applicant is eligible, and to what extent, under the terms of the Act; after which the applicant shall receive support from the public treasury. Before doing this, however, the County Supervisors must have, among other things,

"the evidence of a duly licensed and practicing physician that the applicant is blind. The physician shall describe the condition of the applicant's eyes and testify to his blindness."

In the administration of the Act, so far as the State is concerned, Section 10 provides as follows:

"Sec. 10. The department of social welfare shall have power to make purely administrative rules and regulations to enforce this act, which rules and regulations shall not conflict with the provisions of this act. Said department shall create a division which shall be devoted exclusively to carrying out the provisions of this act, which shall be headed by a chief. . . . It shall be the duty of the chief of the division

for the blind in the department of social welfare to keep in the office of the division a complete list of all applicants for aid under this act and to prepare application blanks for use of applicants for aid, which shall be printed by the state printer and supplied to the county clerk of each county and city and county.

"The county clerk shall mail without charge application blanks for aid under this act to any resident of his county immediately upon request therefor."

* * *

The Department's Form-Blank, "Report of Physician."—In accordance with the above provisions, the Division of the Blind of the California Department of Social Welfare has prepared a "Report of Physician" blank, which, in brief form, is here reprinted:

"This Is To Certify, That I am a duly licensed and practicing physician and have this day examined the above named blind person in accordance with the United States Census † standards and find that he is blind and that the degree of blindness is as follows:

	Left Eye	*Right Eye*
1. Absolute	.....	.....
2. Relative	.....	.....
3. Practical	.....	.....

Signature of physician:

.....

Remarks
(To be filled out by physician)

Do you suggest any special treatment for applicant?
.....
Do you feel applicant's vision can be improved by refraction or treatment? .....
Is applicant's general physical condition good? .....
Do you consider applicant's condition a source of danger to the family? .....
Do you feel patient can be rehabilitated? .....

* * *

Does This "Report of Physician" Blank Adequately Serve the Interests of the State and of the "Needy Blind"?—The above information concerning the "needy blind" Act is given, not so much to stress the very large increase in the amount of State and County funds—because that is a matter for other agencies to look into—but rather to call attention to the nature of the blank, entitled "Report of Physician." From the standpoint of a thorough investigation of partial or total blindness, the blank would probably be construed to be quite inadequate by insurance agencies. The representatives of such companies would wish to have more accurate and detailed information than is given in the blank, and in many instances would probably want the statements of one or more physicians who were eye specialists. The records of the insurance companies and the State Industrial Accident Commissions have many cases in their files, where partial or total blindness have been proven not to exist, even though so claimed. It is but just to the citizen taxpayers of the State that only those persons who are rightly eligible should receive support from public funds.

† The United States Census Division uses the following classification of blindness:
1. Total or absolute blindness—where there is a total loss of sight.
2. Relative blindness—where the fingers cannot be counted at a distance of three feet, but moving objects may be discerned.
3. Practical blindness—where moving objects may be discerned at nine feet, but no useful vision remains.

The California Division of the Blind Has Only Incomplete Statistical Data.—In a letter from the director of the Division of the Blind, in answer to a query concerning the amount of statistical information concerning causes of blindness, the following was stated:

"Until recently this Department kept a statistical record of all data contained in each application for aid to the blind, including causes of blindness, etc. However, we have had to discontinue these statistics for the present."

* * *

This Year's American Medical Association Resolutions Regarding Definitions of Blindness.—In connection with the above, it may be pertinent to reprint the resolutions adopted by the House of Delegates of the American Medical Association at the Cleveland meeting on June 12 of this year. These resolutions were presented by the Section on Ophthalmology, in response to a request from the Department of Public Welfare of the State of Illinois, and they are commended to the consideration of the California Department of Public Welfare:

Resolution on the Definition of Blindness, from the Section on Ophthalmology

"Dr. Emory Hill, Section on Ophthalmology, presented the following resolution, which was adopted on motion of Doctor Hill, seconded by Dr. Ralph A. Fenton, Oregon, and carried:

"Whereas, A committee was appointed by the Section on Ophthalmology of the American Medical Association, in response to a request from the Department of Public Welfare of the State of Illinois, for a definition of blindness in scientific terms, that might be made statutory; and

"Whereas, There are various grades of blindness which should be distinguished; therefore be it

"Resolved, That the following definitions for grades of blindness be accepted by the House of Delegates:

"Total Blindness is inability to perceive light; lack of light perception. The person who is totally blind cannot tell whether strong light falls on his eyes or whether they are in total darkness. Light perception is vision such as one has when the eyelids are closed.

"Economic Blindness is absence of ability to do any kind of work, industrial or otherwise, for which sight is essential. In general, visual acuity of less than one-tenth has been classed as economic blindness, meaning that objects can be recognized only when brought within one-tenth of the distance at which they can be recognized with standard vision. Such vision in the better eye, when corrected with the best possible glass, would be recorded as less than 0.1 or 6/60 or 20/200, or as an equally disabling loss of the visual field.

"Vocational Blindness is impairment of the vision that makes it impossible for a person to do work at which he had previously earned a living. He may still have vision enough to do some other kind of work that may yield him an adequate support. Such vision in the better eye with the best possible correcting glass may vary from one-tenth to one-third; that is, from 0.1 or 6/60 or 20/200 to 0.3 or 6/18 or 20/60, depending on the vision required for the occupation previously followed.

"Educational Blindness is such loss of sight as makes it difficult, dangerous or impossible to learn by the methods that are commonly used in schools. This necessitates two types of schooling for such individuals, namely, sight-saving classes and schools for the blind. The requirement for *admission to sight-saving classes* is vision in the better eye with the best possible correcting glass of less than 20/70 and more than 20/200.

"The requirement for *admission to the school for the blind* is vision in the better eye with the best possible correcting glass of 0.1 or 6/60 or 20/200 or less."

* * *

The Department of Public Welfare Has Authority to Revise Its Blank.—It is possible that the State of Illinois may have faced a situation akin to that which exists in California. Certainly, with the large amount of public funds which California expends under the provisions of the "needy blind" Act, it is highly desirable that the records, both scientific and fiscal, should be accurate, ample and above reproach. It would seem, from a perusal of Section 10, that the Division of the Blind has full authority to devise a form-blank that would make for scientific diagnosis of the nature and amount of blindness; because, upon such accurate information the real justification of expenditure of moneys by the State and counties must rest. The eye sections of the California, San Francisco and Los Angeles medical societies, through representatives, would probably be glad to give the Division of the Blind their full coöperation in such an endeavor.†

* * *

Mistakes Can Easily Occur Under the Present Loose System.—Under present conditions, errors in procedure and decisions can readily occur. One instance, and that which in the beginning led us to look up this Act, occurred some months ago at the Los Angeles County Hospital. A "needy blind" applicant appeared at the eye clinic for a free examination. This was made. The patient was partially blind, but the blindness probably could have been removed by a cataract operation. The eye resident on that account refused to sign the certificate. A representative of the California Division of the Blind then called upon the resident and also upon the medical director of the hospital, stating, in no uncertain terms, that the application should have been signed, cataract or no cataract. The application, nevertheless, was not signed, at least at the hospital. We do not know whether that applicant is receiving State and County aid; but if so, the issue raises an interesting question—namely, as to whether such an individual, after refusing a cataract operation with the possible removal of blindness, should be eligible to State and county support? This instance indicates why it should be advisable to work out a new and better form-blank for the "Report of Physician"; and because the subject is of civic and medical interest, it has been here discussed.

MATERNAL DEATHS

The Children's Bureau of the United States Department of Labor has recently brought off the press of the Government Printing Office at Washington, "Bureau Publication No. 221"* on "Maternal Deaths; With Brief Reprint of a Study Made in Fifteen States." California was included in this study; Dr. Frank W. Lynch, professor of obstetrics, University of California Medical School, being a member of the Obstetric Advisory Committee which commented upon the major topics that were considered in the report. The brochure has sixty pages, and presents interesting statistical information and valuable advice based on an analysis of the mortality in the fifteen states that are a fair cross section of the Union. Some excerpts from the "Comment by Advisory Committee" on cesarean section, give an indication of the nature of the advisory comment:

"The very fact that cesarean section was done on one-fourth of all the women who died following operation for delivery suggests that there had been unwise selection of cases for the operation, or on the types of operation, or both, as cesarean sections constitute only a small percentage of all operative deliveries in general. Additional evidence to this effect is found in the causes of the deaths following cesarean section. . . .

"There was evident lack of recognition of the fact that the mortality from classical cesarean section increases with the length of time the woman has been in labor and with attempts at delivery from below.

"In any discussion of sepsis following cesarean section it is to be remembered that the operating surgeon often does not have 'first chance' with his patients. Yet this should be no reason for unwise selection of the operation to be performed. In many of these cases a Porro or low cervical operation should have been done instead of the classical cesarean; in others no type of cesarean operation should have been done. . . .

"The tremendous mortality attending cesarean sections throughout the United States warrants careful review of the indications in the choice of operation."

As previously stated, the report covers a wide range of subjects. The five cents, asked by the Government Printing Office,* is a sum so modest that a copy should be sent for and scanned by every physician doing obstetrical work.

The scope of the work may be appreciated by glancing at the table of contents, which follows:

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* For sale by the Superintendent of Documents, Washington, D. C., at five cents per copy.

† A very interesting and suggestive report from the Division of the Blind of the State of Massachusetts came to the editor's desk as the page proofs of the August CALIFORNIA AND WESTERN MEDICINE were being revised for the printer. That report gives information such as is suggested in these comments.

EDITORIAL COMMENT*

PSITTACOSIS IN GERMANY AND HOLLAND IN 1934†

Through the courtesy of Professor Joseph Fortner of the Robert Koch Institute for Infectious Diseases, at Berlin, important data on psittacosis in Germany have been made available. Since the information is of greatest significance to the bird breeders and to the bird industry, the essential facts deserve wider publicity.

During the early months of this year the attention of the Institute was directed toward seventeen family epidemics which had occurred in Berlin (fourteen house epidemics), in Hattingen-Ruhr (one), in Cologne (one), and in Jena (one). Additional cases were reported from Leipsic. The number of actual cases of psittacosis in the families varied from one to seven. A total of forty-two human beings with ten deaths (24 per cent) (4 ♀ and 6 ♂) were involved in these outbreaks.

Professor Fortner, in using the customary inoculation technic on white mice, succeeded in demonstrating the virus of psittacosis in the spleen of three fatal human cases and in the tissues of seventeen shell parrakeets which were present in the households. The birds appeared, with the exception of one, as perfectly healthy. The examination of sixteen parrakeets of a bird store revealed two carriers. These budgerigars originated from a local aviary in which sixty-six deaths among a flock of 126 had been noted during the summer of 1933. Although transmission experiments were not made at that time, the anatomic and bacteriologic studies leave little doubt that the mortality was in reality caused by the psittacosis virus. The inquiries establish the existence of psittacosis as an endemic disease among the shell parrakeets bred and raised in Germany. The authorities have recommended the destruction of the diseased birds and the flocks harboring parrakeets with latent infections. Similar steps have been taken by Holland. Several cases of human psittacosis prompted the health agencies to purchase and to destroy the suspected birds of certain aviaries.

It is generally recognized that a disease transmissible from parrakeets to man is now readily identified by physicians. Professor Fortner is impressed by the numerous instances in which the early diagnosis was purely clinical or in part supported by repeated x-ray examinations of the chest. Furthermore, the laboratory studies in Germany confirm fully the observations made in the United States. They attest again to the great value of the mouse inoculation test as a diagnostic procedure in the recognition of the malady.

There can be no doubt that the parrakeet is for the present, at least, the most important disseminator of this dangerous disease. Furthermore, the experiences in Germany and Holland amply support the recognized fact that avian psittacosis is endemic in every country in which parrakeets are raised in large breeding establishments.

The sanitation and the creation of breeding flocks free from psittacosis, is one of the most important problems. Until this aim has been achieved, it is advisable to limit the exchange of psittacine birds between different countries by an embargo. Ultimately the love for birds can be best satisfied by supplying the market with shell parrakeets from noninfected aviaries than by the importation of native parrots or parrotlets from tropical countries. However, the desired goal can only be reached through a whole-hearted coöperation with the health authorities by the bird breeders, pet shop owners and the public at large.

Hooper Foundation, U. of C.,
Third and Parnassus.

K. F. Meyer,
San Francisco.

TREATMENT OF METHEMOGLOBIN IN THE BLOOD BY GLUCOSE*

The presence of methemoglobin in the blood is an abnormal condition, due to the oxidation of hemoglobin. This is a stable form, does not carry oxygen, and therefore diminishes the amount of oxygen available to the tissues.

It has been shown that the formation of methemoglobin can be prevented in animals if glucose is injected intravenously; or, if methemoglobin is already present, injections of glucose will reduce methemoglobin to hemoglobin, which can then readily be oxygenated to oxyhemoglobin.

In experiments demonstrating this, rabbits were used. The dose of $NaNO_2$, which was given to produce methemoglobin, was 0.15 gram per kilogram bodyweight. This amount produces 15 per cent methemoglobin in a few minutes, which is less than the theoretical amount predicted by Wendel[1] for this amount of $NaNO_2$. The presence of glucose in the blood stream is no doubt responsible for the discrepancy in Wendel's calculations. The dose of glucose was 1 c.c. of a 1 per cent solution for every 10 kilograms bodyweight. Both solutions were made in 0.9 per cent NaCl. The per cent of methemoglobin was determined by means of the spectrophotometer, which is sensitive to less than 2 per cent. The values for "R," as found by Ray, Blair and Thomas,[2] were also used here as indicative of per cent methemoglobin.

If nitrite is injected first, so that methemoglobin is formed, subsequent injections of glucose will reduce the methemoglobin completely, so that only oxyhemoglobin will be found. Or, if glucose is injected first and then nitrite, no methemoglobin will appear.

* This department of California and Western Medicine presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

† See, also, article on "Psittacosis" in this issue, page 98.

* From the Zoölogy Department, University of California, Berkeley.

1 Wendel, W B.: Jour. Am. Med. Assoc., 100:1054, 1933.

2 Ray, G. B., Blair, H. A., and Thomas, C. I.: Jour. Biol. Chem. 98:63, 1932.

It is, therefore, suggested that the presence of glucose in the blood stream is the factor responsible for the prevention of methemoglobin formation so often noted experimentally in some animals.

It is also suggested that injections of glucose in saline be used clinically in cases where methemoglobin is present, either as a result of poisoning by anilin dyes, nitrites, or any other methemoglobin producing substances, or where factors exist to produce this condition clinically.

107 Woodmont Avenue.

MATILDA M. BROOKS,
Berkeley.

ISO-ANAPHYLAXIS †

The intuitively assumed non-toxicity of normal, adult human serum is not justified by clinical experience. This is indicated by a half-dozen reports of shock-like conditions following the injection of adult human serum into children.[1] This iso-allergic reaction cannot be explained as a result of physical or chemical denaturation of the injected human serum. There is at least one clinical report of equally serious serum disease following the injection of absolutely fresh, non-heated and demonstrably sterile normal human serum, to which no antiseptic of chemical preservative had been added.[2]

The possibility of iso-allergic shock, due to the injection of serum of the same animal species but of a different blood group, is still untested in laboratory research. This is due to the comparatively recent date of the discovery of different blood groups in animals.[3] The well-confirmed production of group diagnostic iso-agglutinins, iso-hemolysins, and isoprecipitins, however, strongly suggests its future laboratory demonstration.

The possibility of iso-anaphylaxis, due to the use of serums of different age groups, is also largely untested in laboratory research. This is due to the comparatively recent discovery that the animal body is not static in its humoral or cellular specificities. While the available data are inadequate for a detailed theory, there is ample evidence of an hereditary (or environmentally induced) maturation cycle in laboratory animals, with the appearance of numerous previously undemonstrable specificity factors during the pre-adolescent or early adolescent periods.[4] It is alleged, for example, that the injection of adult rabbit serum into immature rabbits leads to the production of adult diagnostic isoprecipitins, by means of which the serological maturity of a rabbit can be approximately diagnosed.[5]

The possibility of pseudo-isoanaphylaxis from circulating food proteins in adult human serum is also, thus far, inadequately tested. This is due to the relatively recent demonstration that the normal gastro-intestinal mucosa is an inefficient barrier against the absorption of gastro-intestinal colloids. Quantitatively measurable amounts of egg protein, for example, are demonstrable in the normal human circulation within twenty minutes after swallowing a raw egg.[6] Pollen proteins are absorbed through the normal nasal mucosa with equal ease.[7]

There is rapidly increasing evidence that such absorbed (or parenterally injected) alien proteins are not promptly destroyed or eliminated from normal animal tissues. Certain recent theorists, for example, have assumed that these absorbed (or injected) alien proteins are semi-permanently retained in the animal body, and there synthesized into semi-alien antibodies.[8] It is definitely known, however, that blood transfusion from a horse-protein injected dog into a horse-protein hypersensitive recipient will throw the recipient into acute anaphylactic shock even as late as six days

† The *Journal of the American Medical Association*, in the July 21, 1934, issue, page 192, prints a current comment article on a related topic which is here reprinted. It is as follows:

"*Sudden Death After Injection of Human Serum.*—While normal human serum is presumably the least toxic therapeutic agent that can be used in attempting passive immunization of children, the opinion that such serum can be injected without danger into children is not justified by clinical experience. European clinicians [1] report that the administration of human serum to children under fourteen years of age is sometimes followed by severe or even serious serum disease in approximately three per cent of the cases. The term "auto-anaphylaxis" has been suggested as a descriptive title for this type of serum shock.[2] The term "iso-anaphylaxis," recently suggested,[3] is, however, more nearly in accord with recent immunologic nomenclature. Assuming that the adult human serums are selected and prepared by competent clinicians and laboratory technicians so as to rule out all dangers from the selection of pathologic serums or from subsequent bacterial contamination, the most obvious explanation of iso-anaphylactic toxicity would be that it is due to physical or chemical denaturation of normal serum proteins. This is probably not the full explanation, however, for investigators [4] report equally serious serum disease following the injection of absolutely fresh, nonheated and demonstrably sterile normal human serum, to which antiseptic or chemical preservatives had not been added. A second obvious explanation would be to assume that the iso-allergic toxicity is due to circulating food proteins [5] or to other circulating environmental allergins,[6] to which the children receiving the serum had a hereditary or acquired specific sensitivity. If this is so, one evident precaution would be to withdraw no serum from donors until at least eight hours had elapsed after the last protein meal. Less plausible explanations are based on the still hypothetical differences in tissue and serum specificity between young children and adults,[7] on the possibility of allergic shock due to the use of adult serums of an alien blood group and on the conceived possibility of "reversed anaphylaxis." [8] The latter would be due to the presence of specific or nonspecific "antihodies" in many normal adult circulations [9] against antigens conceivably present in certain children. Thus far, but one case of iso-allergic serum disease has been reported in American literature.[10] There are several still unreported cases, however, in the recent California experience. No fatality is as yet on record directly attributable to iso-anaphylactic shock." [11]

1 Netter, A.: Compt. rend. Soc. de biol., 78:505, 1915.

2 Nelli, A. R.: Rinasc. med. 7:523 (Nov. 1), 1930.

3 Manwaring, W. H.: Calif. and West. Med., to be published.

4 Marie, P. L.: Compt. rend. Soc. de biol., 79:149, 1916.

5 Donnally, H. H.: J. Immunol., 19:15 (July), 1930.

6 Cohen, M. B., Ecker, E. E., Breitbart, J. R., and Rudolph, J. A.: J. Immunol., 18:419 (June), 1930.

7 Picado, C.: Compt. rend. Soc. de biol., 102:631 (Nov. 29), 1929.

8 Opie, E. L.: J. Immunol., 17:329 (Oct.), 1929.

9 Friedberger, E., Bock, G., and Fürstenheim, A.: Ztschr. f. Immunitätsforsch, 64:294, 1930.

10 Dooley, Parker: Serum Disease, J. A. M. A., 99:1778 (Nov. 19), 1932.

11 The recent California death was seemingly due to improper technical procedures, the injected serum containing a highly virulent strain of Staphylococcus hemolyticus. To obviate this danger, all California laboratories are now under effective control of the State Board of Health.

1 Dolley, P.: J. A. M. A., 99:1778 (Nov. 19), 1932.

2 Marie, P. L.: Compt. rend. Soc. de Biol., 79:149, 1916.

3 Little, R. B.: J. Immunol., 17:377, 1929.

4 Friedberger, E., Bock, G., and Fürstenheim, A.: Ztscher. f. Immunitätsforsch, u. exper. Therap., 64:294.

5 Picado, C.: Compt. rend. Soc. de Biol., 102:631, 1929.

6 Coca, A. F.: J. Immunol., 19:405, 1930. Donnally, H. H.: J. Immunol., 19:15, .1930.

7 Cohen, M. B., Ecker, E. E. Breitbart, J. R., and Rudolph, J. A.: J. Immunol., 18:419, 1930.

8 Mudd, S.: J. Immunol., 23:423, 1932.

after the alien protein injection.[9] By quantitative precipitin tests, measurable amounts of undenatured horse proteins can still be demonstrated in the donor as late as ninety days after intravenous injection.[10]

The possibility of "reversed anaphylaxis" in serum therapy[11] has only recently been taken into account in laboratory research. This is the possibility of producing typical anaphylactic reactions, in laboratory animals whose blood (or local tissues) contain certain specific antigen, by the subcutaneous, intraperitoneal or intravenous injection of homologous specific "immune" serum. The fact that many normal adults have bloods containing hereditary or acquired specific or heterophile antibodies[4] against microbic infections (*e. g.*, tuberculosis) that may be present in children suggests that "reversed anaphylaxis" is of more than academic interest.

While normal adult human serum is presumably the least toxic therapeutic agent that can be used for the passive immunization of man, the prevailing belief that its use is without clinical danger is not in accord with theoretical expectations. According to Netter's very scanty data,[12] serious serum disease should be expected in about three per cent of the cases.

In 1930, the term *autoanafilassi* appeared in Italian medical literature[13] as a descriptive title for this form of therapeutic shock. The suggested term *iso-anaphylaxis,* however, is more nearly in accord with American usage.

Stanford University.

W. H. Manwaring,
Palo Alto.

9 Manwaring, W. H., Marino, H. D., McCleave, T. C., and Boone, T. H.: Jour. Immunol., 13:357, 1927; 15:109, 1928.

10 Sox., H. C., Azevedo, J. L., and Manwaring, W. H.: J. Immunol., 21:409, 1931.

11 Opie, E. L.: J. Immunol., 17:329, 1929.

12 Netter, A.: Compt. rend. Soc. de Biol., 78:505, 1915.

13 Nelli, A. R.: Rinasc. med., 7:523, 1930.

HEMOPHILIA

Hemophilia has usually given disappointing results to treatment. Although called "bleeders' disease," paradoxically it is characterized by a normal bleeding time, but on greatly prolonged clotting time. The primary fault is thought to lie in physiologically defective platelets which fail to liberate adequate cephalin. If hemophilic blood be centrifuged, and the serum decanted and ground with a mortar and pestle, stained smears show that many of the platelets are broken up. If the serum be added, then, to the hemophilic red blood cells and mixed thoroughly, the blood clots in a short time. Apparently the blood platelets contain normal cephalin which merely needs liberation.

The work of Birch[1] has stimulated interest in the treatment by the use of the ovarian hormones. Since women are immune, it was postulated that they were protected by ovarian secretion, which broke up the resistant platelets. By giving ovarian extract parenterally, this worker obtained good clinical results in nine patients, less marked improvement in nine others, and a failure in one more. Generally, there occurred an increase in weight, hemoglobin, and vitality. Specifically, there was a decrease in number and severity of the hemorrhages and lowering of the coagulation time.

Since then there have been a number of clinical case reports of cessation of bleeding following administration of ovarian extract, but these are of inconclusive import because they were aided by transfusions, and in some the blood clotting time was not determined before treatment.

Accurate evaluation of therapy based even upon the response of the clotting time alone is impossible because of the extreme fluctuation in the untreated case. Birch reports one patient's clotting time as varying from forty minutes to five hours over a period of eighteen months.

Birch's theory hinges upon the presence in the normal male of a certain amount of female sex hormone which insures normal platelet action. "The normal male is not pure male, but part female." Dohrn,[2] Laqueur,[3] and others, have reported the presence of estrogenic substances in the urine of normal males. Birch's normal male controls showed the presence of the hormone in the urine. She reasoned that the hemophiliac lacked this protective hormone, and demonstrated to her satisfaction the absence of this hormone.

Other workers fail to agree with her. Frank[4] failed to find estrogenic substance in the urine of normal males in twelve instances. Freeman[5] could not find it in male urine before puberty, and in only one after puberty. Brem and Leopold[6] could not demonstrate any hormone in either a hemophiliac or a number of normal males. Clinically, in spite of daily injections of ovarian extract, for weeks they saw no improvement, either subjectively or in the reduction of the clotting time. Brown and Albright,[7] however, found estrogenic substance in the urine of a hemophilic patient before treatment with the sex hormone. The amount increased after treatment, but there was no coincident improvement in the clotting time.

This wide disparity in results certainly allows for no conclusions. It seems wise to hold judgment in abeyance until further evidence is assembled. Only careful study extending over a period of months and years can clarify the situation.

902 Wilshire Medical Building.

John Martin Askey,
Los Angeles.

1 Birch, Carroll I.: Hemophilia, Proc. Soc. Exper. Biol. and Med., 28:752 (April), 1931. (A) Birch, Carroll: Hemophilia and Female Sex Hormone—Preliminary Report, J. A. M. A., 97:244 (July 25), 1931. (B) Hemophilia, *Ibid.*, 99:1566 (Nov. 5), 1932.

2 Dohrn, M.: Ist der Ollen-Doisy Test Spezifisch, für das Weibliche Sexual hormone, Klin. Wchnschr., 6:359 (Feb. 19), 1927.

3 Laqueur, Ernst, Dingemanse, E., Hart, P. C., and de Jongh, S. E.: Ueber das vorkommen Weiblichen Sexual hormones (Menformon) in Harn von Mannern, Klin. Wchnschr., 6:1859 (Sept. 24), 1927.

4 Frank, R. T., and Goldberger, M. A.: Significance of Female Sex Hormone Reaction in Male Blood, Proc. Soc. Exper. Biol. and Med., 25:477 (March), 1928.

5 Freeman, R. G.: Mentioned in Brem and Leopold's article.

6 Brem, J., and Leopold, J. S.: Ovarian Therapy, J. A. M. A., 102:200 (Jan. 20), 1934.

7 Brown, R. L., and Albright, F.: Estrin Therapy in Case of Hemophilia, M. Eas. J. M., 209:630 (Sept. 28), 1933.

STATE MEDICAL ASSOCIATIONS

This department contains official notices, reports of county society proceedings and other information having to do with the state associations and their component county societies. The copy for the department is edited by the state association secretaries, to whom communications for this department should be sent. Rosters of state association officers and committees and of component county societies and affiliated organizations, are printed in the directories noted under Miscellany, on the front cover index.

CALIFORNIA MEDICAL ASSOCIATION

CLARENCE G. TOLAND.....President
ROBERT A. PEERS.....President-Elect
EMMA W. POPE.....
Secretary-Treasurer and Associate Editor for California

COMPONENT COUNTY MEDICAL SOCIETIES

HUMBOLDT COUNTY

The Humboldt County Medical Society met on the afternoon and evening of June 21 at the Humboldt Golf and Country Club. We had as our guests the members of the Dental Association. The guest speaker was Dr. P. H. Pierce of San Francisco. The afternoon was spent in golf, followed by a dinner at the Club. During the evening Doctor Pierce gave a paper on *Reconstructive Surgery*. His talk, with the aid of two reels of films, was very instructive.

The infantile paralysis situation was discussed by our local health officers, after which Doctor Myers appointed committees to coöperate throughout the county.

Our next meeting will be at the Humboldt County Tuberculosis School, under Doctors Watson and Woolford. LAWRENCE A. WING, *Secretary*.

MARIN COUNTY

The Marin County Medical Society held its usual monthly meeting on Friday evening, June 29, at the Marin Golf and Country Club. Dr. Karl Meyer of the Hooper Foundation spoke for three hours on the present poliomyelitis situation and showed his two latest films.

Fourteen members of the Sonoma County and Napa County medical societies were present to enjoy Dr. Meyer's impressive talk. CARL W. CLARK, *Secretary*.

SANTA CLARA COUNTY

At the June 20 meeting of the Santa Clara County Medical Society, the following officers were elected for the ensuing year: President, C. K. Canelo; first vice-president, Bart Gattuccio; second vice-president, D. T. Lundquist; third vice-president, John Clark; secretary, E. O. G. Schmitt; assistant secretary, Leslie B. Magoon; treasurer, H. J. Hoag; councilors, Horace Jones, C. S. Sullivan, and George P. Hall.

E. O. G. SCHMITT, *Secretary*.

TULARE COUNTY

A special meeting of the Tulare County Medical Society was called at Tony's Café in Porterville on the evening of Wednesday, June 6, to hear Dr. Karl F. Meyer of the Hooper Foundation, University of California. A representative group of Kern County Society members were in attendance to share this privilege.

A dinner preceded the meeting, with fifty-five members and guests in attendance.

Dr. Donald Fowler presided, and introduced Dr. P. N. Root, president of the Kern County Medical Society. The meeting was then given over to Dr. Karl Meyer. Doctor Meyer consented to stop over and talk on his way from the south, where he had been conferring on the recent outbreak of poliomyelitis, being now here also to personally investigate the question of selvatic plague in this district.

Doctor Meyer was more than generous with his time and wide fund of information. The first part of the evening was devoted to the subject of *Anterior Poliomyelitis*. A graphic statistical chart representing the year in which poliomyelitis occurred in epidemic proportions (1925-1934) verified his statement that it is an unpredictable disease, both epidemiologically and clinically. The criteria for establishment of centers for treatment were carefully outlined. Practical treatment suggestions, as at present used in these centers, were given in detail.

The use of convalescent serum intraspinally was condemned. Such serum is to be administered only intramuscularly or intravenously in glucose (one part serum to five parts 15 per cent glucose). It is recommended that convalescent serum be used in 100 cubic centimeter amounts for adults and 50 cubic centimeter amounts for children, as a minimum. The serum should be used early and given daily until the temperature is normal for twenty-four hours. The exception being the dromedary type. Typed whole blood transfusions from convalescent donors are life-saving in bulbar cases. Convalescent serum for prophylaxis is excellent if an adequate supply of properly tested serum is available, but during an epidemic it should be saved for treatment. Contacts in the family—nurses, interns, and children of doctors treating cases of poliomyelitis—should be given convalescent serum in 20 cubic centimeter amounts, repeated every four weeks; nurses and interns to be repeated every two weeks. Where serum is not available for contacts, pooled blood from the parents in the amount of 50 cubic centimeters may be given intramuscularly.

Moving-picture films were used to emphasize and clarify the subject.

The next subject taken up was that of *Selvatic or Wild Rodent Plague*. It is of particular interest to us in Tulare and Kern counties, where plague-infested rodents have been found. Doctor Meyer is making a personal tour of inspection through the infested areas. Selvatic plague occurring in this area late this fall may be manifested in humans in pneumonic form.

Considerable time was allotted to the subject of *Undulant Fever*, with particular reference to vaccine treatment. Vaccine treatment is apparently efficacious in those cases where the leukocytes are mobilizable. The main body defense in undulant fever is phagocytosis. When the phagocytic index is high, dramatic results follow.

This meeting was voted the most valuable of the year. We feel greatly indebted to Doctor Meyer for his kindness in coming to us on such short notice.

The meeting adjourned at midnight.

CARL F. WEISS, *Secretary*.

VENTURA COUNTY

The May 8 meeting of the Ventura County Medical Society was held at the Clinic building of the Ventura County Hospital.

Doctor Coffey reported, as a delegate, on the California Medical Association annual session held at Riverside. A complete and comprehensive report was given. Doctor Ullmann, as a councilor, asked for an opinion of the society regarding the medical service plan.

Dr. W. S. Clark expressed the opinion that a definite step in the solution of the cost of medical care

problem would be made if we had some compulsory insurance plan to take care of the cost of hospitalization.

Doctor Osborne stated that they have a problem in his section of the county in the care of indigent patients, as many times they have no means of transportation to the county hospital and clinic. So it falls to the doctors to take care of them, with no means of obtaining compensation from the county.

Upon motion of Dr. W. S. Clark it was voted that we appoint a committee to work out a suitable plan for the care of county indigents who are unable to get to the county hospital or clinic.

The society gave a vote of thanks to Doctor Coffey for his very fine report of the convention.

* * *

The June 12 meeting of the Ventura County Medical Society was held in the Clinic building of the Ventura County Hospital.

A scientific program consisted of case reports from members of the attending staff of the Ventura County Hospital.

Doctor Homer reported a case of cancer of the skin treated before he had seen the patient, with paste which had involved the paratid and cervical glands. All glands in that side of the face and neck were removed, as well as the sternoclidomastoid muscle. The patient was presented for inspection. There has been no recurrence so far. Doctor Homer also told of a case where a man was struck in the abdomen by a man's knee, which resulted in a puncture wound to the small bowel. He was not operated until the following morning, when it was found that he had generalized peritonitis.

Dr. Lillian Smolt presented a child who had had measles and later developed central nervous system symptoms. A diagnosis of post-measles encephalitis was made. The child recovered, but has lost the power of speech. The treatment was mainly frequent spinal taps.

Doctor Shore presented several rectal cases.

Doctor Mosher presented a case of meningitis resulting from a stab wound through the ear, leaving the end of the knife blade embedded in the petrous portion of the temporal bone. The piece was removed and the patient recovered.

Dr. W. S. Clark presented some interesting cases of fractured spines, telling of a new principle of treatment.

The application of Doctor Stoll for membership was accepted. FRED A. SHORE, *Secretary.*

CHANGES IN MEMBERSHIP

New Members (34)

Alameda County.—Salvatore Cieri, Stanley S. Davis, Walter K. Iriki, Francis K. Kearney, Harrison J. Kolb, Harold W. Lambert, James A. McKenney.

Contra Costa County.—Walter Johnson.

Kern County.—Harry W. Lange.

Los Angeles County.—Marion W. Baird, Mary B. Dale, Henry L. Davis, Russell M. Decker, Edward A. Franklin, Sutton H. Groff, J. F. Garrison, Anna S. Hohanshelt, Emma McNair Kittredge, Madeline M. Manuel, Chester H. MacKay, Paul W. Prince, William Rachmel, Ferris W. Thompson, Julian O. Wilke.

Merced County.—Paul A. Werthmann.

Riverside County.—Hugh Edgar Felps.

Sacramento County.—Louis J. Gouguet.

San Bernardino County.—Edwin Bruce Godfrey.

San Diego County.—Horace E. Spruance, Robert L. Worthington.

San Francisco County.—Edward M. Lipsett, Charles F. Sweigert.

Tulare County.—C. M. Mathias.

Ventura County.—Arthur H. Stoll.

Transferred (1)

George K. Abbott, from Los Angeles County to Mendocino County.

In Memoriam

Glaser, Edward Frederick. Died at San Francisco, May 9, 1934, age 68. Graduate of Cooper Medical College, San Francisco, 1895, and licensed in California the same year. Doctor Glaser was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Hall, John Howard. Died at Sacramento, July 2, 1934, age 52. Graduate of Atlanta College of Physicians and Surgeons, 1905. Licensed in California in 1919. Doctor Hall was a member of the Sacramento Society for Medical Improvement, the California Medical Association, and the American Medical Association.

✝

McKay, Emma E. Died at Hollister, July 9, 1934. Graduate of the University of California Medical School, San Francisco, 1892. Licensed in California in 1893. Doctor McKay was a member of the San Benito County Medical Society, the California Medical Association, and the American Medical Association.

✝

McKay, William T. Died at Long Beach, June 12, 1934, age 70. Graduate of Rush Medical School, 1881. Licensed in California in 1931. Doctor McKay was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✝

Oatman, Homer C. Died at San Diego, June 16, 1934, age 29. Graduate of McGill University Faculty of Medicine in 1931 and licensed in California the same year. Doctor Oatman was a member of the San Diego County Medical Association, the California Medical Association, and the American Medical Association.

OBITUARY

Trusten Mitchell Hart

1881-1934

Trusten Mitchell Hart was born in St. Charles County, Missouri, September 11, 1881. His preliminary education was obtained in Montgomery City, Missouri. Later he attended Washington University, St. Louis, and in 1911, at Los Angeles, received his M. D. degree from the University of California, after which he went into private practice in that city.

During the World War he was stationed most of the time at Fort Oglethorpe as a lieutenant in the Medical Reserve Corps.

Formerly he was one of the physicians for the Los Angeles County jail and for the Los Angeles Railway Company. At the time of his death he was one of the physicians for the Health and Corrective Department of the Los Angeles City Schools; was a member of the senior staff on the Orthopedic Service at the Los Angeles County Hospital, and had charge of the Crippled Children's work for the county of Los Angeles. He was a consulting surgeon for the Los Angeles Police Department. He was a member of the Los Angeles County Medical Association, California Medical Association, American Medical Association, Los Angeles Surgical Society, and the American College of Orthopedic Surgeons.

Doctor Hart's death, from a heart attack, took place at Los Angeles harbor, Saturday, July 14, 1934.

By nature he was of a rugged temperament, which, when among men, at times almost took on the form of bluntness, but bluntness always with honesty and fairness. His real kindliness was shown always in his loyalty to the unfortunate, and in his love for and success in work with the crippled children who had been placed under his care.

His friends, and there were many, knew him for his goodness, and were devoted to him. His passing therefore, leaves for them a real void. *Requiescat in pace!*

C. M. A. DEPARTMENT OF PUBLIC RELATIONS*

San Diego's Central Clinic Service †

Prior to 1930, the San Diego County Medical Society had little if anything to do with the admission of patients to the County Hospital. Since that time we have caused to be incorporated in the San Diego County Charter a County Institutions Committee, which is composed of lay members and members of the county medical society. This committee virtually runs the County Hospital and controls the admissions thereto.

The Central Clinic Service reported by Doctor Holder at the California Medical Association annual session in 1933, is working satisfactorily. Under this system, both the hospitals and the members of the medical society take patients on a reduced fee basis. No one in San Diego County need go without good medical care and at a price which they can reasonably pay. This has largely removed the immediate need for a health insurance program.

The problem in every community is different. In San Diego County we do not feel that there is any need or general demand for pure hospital insurance. We do not believe it could be sold in San Diego or give any material aid to community problems. We have a large floating Navy population which is hospitalized on a contract basis and would not be interested in hospital insurance. Also, we have no large industrial groups such as are present in the larger communities. In other words, it would be necessary to sell insurance largely to the ordinary individual.

If, and when any insurance program is necessary in San Diego, the county medical society believes it should be a complete coverage—medical, hospital, and possibly dental care. The county medical society has developed a tentative plan of organization to furnish health and hospital care, but, as elsewhere, we are faced with two unanswered problems that must be solved before further progress can be made. These are, first, the status of our corporation with the State Insurance Department, and second, the problem of group liability. We feel that these are State-wide problems and that they must be solved by the California Medical Association rather than by any component county unit. As soon as these problems are unraveled, the San Diego County Medical Society will proceed to perfect plans for health and hospital insurance in order to be forearmed when the need arises.

Meanwhile, the San Diego County Medical Society is giving energetic support to the Central Clinic Service to cover the local problems of adequate medical care. And if any state-wide plan for hospital or health insurance, or both, is worked out, this San Diego County Medical Society can be counted upon to cooperate in every way.

* An open forum for progress notes on the department's activities and for brief discussions on medical economics. Correspondence and suggestions invited. Address Walter M. Dickie, Room 2039, Four Fifty Sutter Street, San Francisco. This column is conducted by the Director of the Department.

† By Chester O. Tanner, M. D., San Diego.

Fresno County Plan ‡

I wish to submit a brief report of the activities of the Fresno County Medical Society in the matter of securing hospital service for the community, on a periodic payment plan.

For years the medical men here, as elsewhere, have observed with dismay the gradual depopulation of the private hospitals, with the corresponding increase of patients in the County Hospital, while the loss of revenue of the private hospitals has made it increasingly difficult for them to carry on and provide necessary facilities.

We have seen an ever-increasing number of our former private patients, by choice or necessity, hospitalized at the County Hospital, which we help to support by taxation, and in which we furnish the medical care without compensation.

We have watched the County Hospital change from a small institution for indigents to a great modern hospital, providing care for more than half of the patients hospitalized in the county, and have seen the impoverishment of the physicians and private hospitals of the community in direct ratio.

We noticed with interest the earnest efforts of a friendly Board of Supervisors and County Social Service to reduce taxpayers' cost by limiting admissions and saw they were ineffective, because too many patients lacked available funds for private hospital service; even though, in many instances, the attending physicians felt they could ultimately collect for their services.

When in September, 1932, the Public Relations Committee of the California Medical Association adopted a set of principles to govern the establishment of hospitalization and medical service, our membership naturally became much interested. These principles and plans for organizing for such service were explained by members of the Public Relations Committee at a series of meetings of our society.

After much discussion, our society voted unanimously for a set-up of the hospitalization service and endorsed the Alameda plan of medical service for semi-indigents. This vote was taken over a year ago and a great deal of preparatory work was promptly done. On legal advice, we changed the constitution and by-laws of our society, to enable us to incorporate for the purpose of furnishing this service. Considerable publicity was given to the proposed set-up and public interest became general. In order to get some idea of the prospects of successful sale of hospital service contracts, a sum of money was voted by the society for test work. An industrial engineer and his staff made a fairly complete survey of local conditions and conducted a series of meetings with employer groups, business men and civic leaders. This test work secured a very encouraging response and seemed to indicate probable success, and a certain success for securing employed groups.

As developed from the test work, the considerations which seemed to appeal most forcibly to the public were the following:

A non-profit organization devoting all surplus funds for the benefit of contract holders;

A community effort to correct an existing economic trouble;

A reduction of expense for the taxpayer;

A sufficient spread of risk to insure financial certainty of performance;

As few restrictions of service as safety permits;

The possibility of budgeting for an expense otherwise uncertain as to amount and time.

The method of sale of contracts came in for much discussion and consideration. In our community it seems a campaign organized with volunteer workers along the lines of a Community Chest drive is most likely to succeed. Rates to be charged for the service were not definitely determined, but the maximum of

‡ By A. E. Anderson, M. D., Fresno.

one dollar per month per individual, with some reduction for groups and families, was agreed upon, with a possible reduction after a reserve was accumulated.

We seemed about ready to go ahead and make our county a laboratory test of this plan a year ago, but again, on legal advice, we stopped activities for many months, while we waited for the completion of forms and the approval of the State Insurance Commissioner.

Early this year we received the forms for incorporation, contracts, et cetera, and set to work with the help of our local attorney to adapt them to our local conditions and requirements. After much work on the part of our committee, our forms were adjusted satisfactorily and again we were ready to proceed. We are still waiting for the attorneys and the State Insurance Commissioner to say "go to it."

The appeal to the public on the basis of a community service by a non-profit organization enabling the family to budget the possibility of hospital expense at the cost of a postage stamp per day, per person, combined with a plan for medical service for people of moderate circumstances at rates they can afford to pay, giving a sense of security against illness expense impossible heretofore, should win general approval. The merits of this plan are so outstanding that it deserves a trial.

In this age of rapid social changes, there is much talk of compulsory State medical and hospital insurance. Figures seem to indicate that the per capita expense for hospital care in California is about five to six dollars. The State, counties and cities are paying about $15,000,000 of the expense already. It would seem a short step to pass on the remaining fifteen or twenty millions to the taxpayers and provide free hospital care for everybody. The next step is reasonably certain to provide free medical care.

To prevent legislation of this kind, we must offer some plan which will meet public favor, and do it promptly.

It seems the plan proposed is worthy of a trial.

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

MRS. PHILIP SCHUYLER DOANE .....President
MRS. ELMER BELT.....Editor and Chairman of Publicity

State Board Meeting.—The president, Mrs. Philip Schuyler Doane, announces a meeting of the State Board of the Woman's Auxiliary to be held Tuesday, September 4, at the Chapman Park Hotel, 615 South Alexandria, Los Angeles. All county presidents are cordially invited to attend this meeting.

* * *

The appointment of chairmen for the following standing committees for 1934-1935 is given as: Membership and Organization, Mrs. William H. Sargent of Oakland; Health Education and Program, Mrs. Charles E. Howard of San Diego; Finance, Mrs. Thomas J. Clark of Oakland; Public Relations, Mrs. John V. Barrow of Los Angeles; Public Health Activities, Mrs. Robert T. Sutherland of Oakland; Editor and Publicity, Mrs. Elmer Belt of Los Angeles; "Hygeia," Mrs. Frank Baxter of Oakland; Convention, Mrs. Frederick N. Scatena of Sacramento.

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. A. Elmer Belt, chairman of the Publicty and Publications, Committee, 2200 Live Oak Drive, Los Angeles. Brief reports of county auxiliary meetings will be welcomed by Mrs. Belt and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxillary notes.

American Public Health Association Convention.—Beginning Sunday, September 2, the American Public Health Association will hold its annual meeting in Pasadena, with headquarters at the Maryland Hotel. Members of the State Board of the Woman's Auxiliary to the California Medical Association, all county presidents, and members of the Los Angeles County Auxiliary Board have been asked to serve as hostesses for this great convention, which promises to have about three thousand members in attendance. On Sunday afternoon at four o'clock, an al fresco tea will be given in the gardens of the Maryland Hotel, to welcome the visiting delegates, members, and guests. All auxiliary members will be most welcome at the tea and also at the lectures. Programs for the entire session, which include many items of deep interest, will be available at the Sunday tea. If any further information is desired about the convention, Mrs. Doane of Pasadena has graciously offered to answer inquiries.

* * *

Component County Auxiliaries

Alameda County.—A novel and delightful idea was carried out at the May luncheon meeting of the Woman's Auxiliary to the Alameda County Medical Association. The mothers of the members' husbands were honored with a special Mother's Day program, and each one was presented with a charming, old-fashioned nosegay.

Dr. Aurelia Henry Reinhardt, president of Mills College, was the speaker of the day, and her subject, *Medicine and Motherhood,* was not only appropriate, but most interesting. The Mills College Trio entertained with several delightful selections. Doctor Reinhardt was made an honorary member of the Auxiliary at this meeting.

The doctors' mothers who were present were: Mesdames H. J. Bell, Smithies, Yabroff, Sargent, Gray, Allen, Sharpsteen, Furbush, Henry Meyers, Harry Bell, Barnard, Trimbull, Ewer, and Chamberlain. The meeting was held at the Women's Athletic Club, with Mrs. John Ewer as luncheon hostess, assisted by Mrs. A. W. Henry and her committee. Mrs. Carl Allen took charge of the reservations, of which there were one hundred and twenty-nine.

MRS. NELSON KEELER, *Publicity Chairman.*

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Kern County.—Mrs. N. N. Brown, president of the Woman's Auxiliary to the Kern County Medical Society reports another organization meeting since the inception of their auxiliary in May. A Revisions Committee, headed by Mrs. L. C. McLain, assisted by Mrs. George Buchner and Mrs. F. G. Gundry, is busily at work fitting to local needs certain of the by-laws. An inquiry into certain phases of juvenile protection has already been decided upon as welfare work to be undertaken with the opening of the fall program, while their fine efforts in aiding the registration and voting of intelligent citizens on crucial legislation will continue. Working with Mrs. Brown as officers are Mrs. A. R. Moodie of Taft as vice-president, Mrs. George Buchner of Bakersfield, treasurer, and Mrs. Louis Packard, secretary, also of Bakersfield.

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Los Angeles County.—A public health program was chosen by Mrs. John V. Barrow, president of the Los Angeles County Auxiliary, to feature the last meeting before summer vacation. Held at the Friday Morning Club, and preceded by luncheon, there were four fifteen-minute speeches, each relating to some public health problem, and made by eminent speakers selected by Mrs. Charles E. Futch, the program chairman. Dr. Charles W. Decker, former city health officer, spoke on government; Dr. Robert Meals came to represent his chief, Dr. A. G. Bower, and gave last-minute reports on the present poliomyelitis situation here, and also interpreted a newly released film on the subject, made under the direction of Dr. Karl

F. Meyer of the Hooper Foundation for Medical Research. Mr. Ben H. Read, secretary of the Public Health League, again called attention to the importance of legislation; and Mrs. Philip Schuyler Doane, president of the California State Auxiliary, reported the National Auxiliary convention in Cleveland, from which she has recently returned. Special guests for the day were several of the Parent-Teacher Association officers, faculty wives from the College of Medical Evangelists, including Mrs. Percy T. Magan, wife of the president, and also a group representing the Los Angeles County dentists, who have expressed a wish to form a similar auxiliary of their own. One hundred and eighty-five reservations were filled.

One of the gayest festivals ever held here in the cause of friendly fellowship among the profession was "La Fiesta Para Los Medicos," a gala Spanish garden party, given by the Los Angeles County Auxiliary for the medical association members at the lovely Del Amo estate on July 7. Among the dinner tables, under a great vine-covered pergola, Jose Arias and his costumed troubadors strolled and played, and the lights shining over dozens of fine Spanish shawls, shaken from cedar chests to adorn shoulders for the night, brightened the outdoor setting. Dancing in the big, rustic cabin, games of chance in the many recreation rooms hung with vivid bull-fight posters from Seville, cards in the pavilion, and serenaders in the balconies overhanging the gardens, filled the night with music and merriment. Every one of the two hundred and fifty reservations were taken, and many groups motoring in from the outlying communities gave to the occasion a county-wide representation. To Mrs. A. Brockway, our indefatigable hospitality chairman, and her committee aides, Mesdames Philip Stevens, Otto Bames, Buie Garstang, Victor Sprauer, and many other volunteer helpers, is due a vote of thanks for this most perfect party, and the happy memory of good will and camaraderie that enshrines it.

MRS. ELMER BELT, *Corresponding Secretary.*

Organization of Assembly and Senatorial Districts by Component County Medical Societies.—The Los Angeles County Medical Association "Bulletin" of August 2 outlines the plan of organization adopted by the Association. Primary Election day will be on August 28. County societies which have not taken up the organization work of their respective districts should give the subject their immediate attention.

The article from the "Bulletin" follows:

The political situation in California demands the attention of every citizen interested in good government. Every doctor of medicine, as a citizen, and as an individual qualified to judge good government, should this year take an active interest in government.

The medical profession, together with members of the other professions, have a stern duty before them this fall as voters to see that the representatives of the people in state government of California are qualified to protect the people through the creation and maintenance of good government.

Especially is this duty an important one in Los Angeles County. In the entire State of California there are eighty assembly districts. In Los Angeles County alone there are thirty. The assemblymen sent from this county to the Legislature at Sacramento will have wide power in the moulding and passage of legislation this coming winter.

It is the duty of every member of this Association to do his part in the very important work of sending to Sacramento, as assemblymen, only such men who will have the best interests of the people at heart—only men with a knowledge of conditions and with a knowledge of the needs of the people.

Much legislation may be anticipated that will bear directly upon the public health and the public welfare. Numerous unproved and fantastic theories dealing with the health of the people are current. The value of these theories cannot be honestly judged by men unacquainted with the field of health and the preservation of health. The doctor of medicine is the one man most competent to judge the value of these theories.

The coöperation of every member of the Los Angeles County Medical Association is imperative—not for selfish purposes or for purposes that may be considered as selfish for the profession as a whole, but to protect the health and the welfare of the citizenry of the county and the state against the adoption of untried and possibly dangerous methods.

The first duty of the membership naturally should be to vote and to see that their acquaintances, friends, and members of their family vote for those candidates who are known to stand for good and constructive government.

One of the highest duties of a doctor of medicine is to protect the health of his community, regardless of personal aims and ambitions.

Individual effort today is not sufficient to insure public security against concerted and organized efforts for change to untried theories.

Therefore, the second duty of every member of this Association will be to work whole-heartedly and unselfishly with organizations that are now being perfected by the County Medical Association.

The sole purpose of these organizations will be to protect the public against unconsidered, theoretical and dangerous governmental procedure at Sacramento at the coming session of the State Legislature.

With the secretary's office as a center for the organization, political organizations are being perfected in each of the thirty assembly districts in Los Angeles County. Each district has a representative of the County Medical Association charged with this organization work. His task is to organize the doctors of medicine and allied professions resident in his district. The secretary's office has supplied each of these representatives with the names of all doctors, voters in that district. Each district organization will be headed by a chairman, a vice-chairman, and a secretary. Each central district organization will appoint captains and lieutenants for active work in the district. Every member—every doctor of medicine—is urged to coöperate whole-heartedly now and throughout the entire session of the coming legislation with his district organization. Each doctor will be made aware of what is expected of him from his local organization through the captains and lieutenants. Each assembly district organization will be kept, through the secretary's office, in constant touch with the political and legislative situation in the state.

There are a great number of candidates for the assembly this year. The qualifications of some of them are known. Their attitude is constructive and in line with good government in public health and public welfare. There are many other candidates, however, whose attitudes on these major issues are unknown. To definitely discover the qualifications of candidates is one of the first tasks presented to the officers of the district organizations in each assembly district.

The legislative situation is such that organization on the part of the County Medical Association is essential, not in the selfish interest of the doctors of medicine, but because they, as citizens, must act in the interest of the public on matters pertaining to public health.

In this work the efforts of the County Medical Association will be aided by the Public Health League of California, and the dental profession.

Thus, a serious responsibility is given to every doctor of medicine in the county and, because it is a responsibility that he should willingly accept, he is expected to give his untiring and whole-hearted support to this program.

Motor Vehicle Fatalities Increase.—There were 2,403 deaths in automobile accidents in 1933, as compared with 2,347 such deaths in 1932. Of these 2,403 deaths, 1,816 were in men and 587 in women. There were fewer deaths in collisions of motor vehicles with pedestrians, but more in collisions of motor vehicles with other motor vehicles, railroad trains, and electric cars. By age groups, motor vehicle deaths in 1933 were as follows:

Under one year	3
1 to 4 years	47
5 to 14 years	145
15 to 24 years	413
25 to 34 years	379
35 to 44 years	360
45 to 54 years	385
55 to 64 years	336
65 years and over	335

It is interesting to note that out of 809 deaths in accidents involving motor vehicles and pedestrians, 221 were in individuals sixty-five years of age and over. Fatalities in non-collision accidents involved the age group of fifteen to twenty-four years, more than any other. More deaths in collisions of motor vehicles with motor vehicles occurred in the age groups fifteen to twenty-four years and twenty-five to thirty-four years than any others. Elderly persons as pedestrians are more often killed in motor vehicle accidents than those pedestrians who are younger. However, a considerable number of children under fifteen years of age were also killed in accidents involving motor vehicles and pedestrians. Young adults universally are more often killed in fatalities involving collisions of motor vehicles with motor vehicles, and in non-collision accidents than are others of either younger or older age groups.

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings

American Congress of Physical Therapy, Philadelphia, September 10-13. Mr. Marion G. Smith, 30 North Michigan Avenue, Chicago, Secretary.

American Public Health Association, Pasadena, September 3-6. Kendall Emerson, M. D., 50 West Fiftieth Street, New York, Executive Secretary.

Pacific Northwest Orthopedic Association, Seattle, September 1. J. C. Brugman, M. D., 1215 Fourth Avenue, Seattle, Secretary.

Western Branch of American Public Health Association, Pasadena, September 3-6. W. P. Shepard, M. D., 600 Stockton Street, San Francisco, Secretary.

Medical Broadcasts*

American Medical Association Health Talks. — The American Medical Association broadcasts on a western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, central daylight saving time.

* * *

San Francisco County Medical Society. — The radio broadcast program for the San Francisco County Medical Society for the month of August is as follows:

Tuesday, August 7—KJBS, 11:15 a. m., and KFRC, 1:15 p. m. Subject: The Immunization Campaign Against Smallpox and Diphtheria, by the San Francisco County Medical Society and the San Francisco Department of Public Health.

Tuesday, August 14—KJBS, 11:15 a. m., and KFRC, 1:15 p.m. Subject: The Story of Jenner and the History of Vaccination.

Tuesday, August 21—KJBS, 11:15 a. m., and KFRC, 1:15 p. m. Subject: Smallpox—A Discussion of the Disease and Reasons for Vaccination.

Tuesday, August 28—KJBS, 11:15 a. m., and KFRC, 1:15 p. m. Subject: Diphtheria—A Discussion of the Disease and the Present Status of Immunization Against It.

The first two lectures in September will also be on this subject.

* * *

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of August is as follows:

Saturday, August 4—KFI, 9 a.m. Subject: Health Talk.

Saturday, August 4—KFAC, 10 a. m. Subject: Your Doctor and You.

Tuesday, August 7—KECA, 11:15 a. m. Subject: Health Talk.

Saturday, August 11—KFI, 9 a.m. Subject: Health Talk.

Saturday, August 11—KFAC, 10 a. m. Subject: Your Doctor and You.

Tuesday, August 14—KECA, 11:15 a. m. Subject: Health Talk.

Saturday, August 18—KFI, 9 a.m. Subject: Health Talk.

Saturday, August 18—KFAC, 10 a. m. Subject: Your Doctor and You.

Tuesday, August 21—KECA, 11:15 a. m. Subject: Health Talk.

Saturday, August 25—KFI, 9 a. m. Subject: Health Talk.

Saturday, August 25—KFAC, 10 a. m. Subject: Your Doctor and You.

Tuesday, August 28—KECA, 11:15 a. m. Subject: Health Talk.

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to CALIFORNIA AND WESTERN MEDICINE, 450 Sutter Street, San Francisco, for inclusion in this column.

Cajal Laboratory of the Los Angeles County Hospital.—The laboratory for neuropathology, section of the general laboratory of the new acute unit of the Los Angeles County Hospital, has been named in honor of the illustrious Spanish neurohistologist, Dr. Santiago Ramon y Cajal. Doctor Cajal has already honored this laboratory by contributing several of his books, as well as the *Travaux,* a journal published by the Instituto Cajal of the University of Madrid. A bronze plaque of Doctor Cajal has been made for the director's laboratory, and a bust will be placed later in the departmental library. The work of the laboratory will be under direction of Dr. Cyril B. Courville.

Some Important State Election Dates:

August 28—Primary election.

September 27—Last day of registration for the general election.

November 6—General election.

Query—Are you registered?

Prevention of Poliomyelitis Deformities.—"Deformities caused by poliomyelitis, or infantile paralysis, can and should be prevented, if proper splintage is used immediately after the disease has attacked the patient.

"Authority for this statement is Dr. Leroy C. Abbott, clinical professor of orthopedic surgery in the University of California Medical School. Treatment, he says, should be started immediately after the onset of paralysis and should consist of absolute bed rest, support of weakened muscles, and the use of splints to prevent deformity.

"Immediately after the disease has attacked the patient, splints made of wire, metal or plaster of Paris, must be applied to the extremities, and the trunk held in position to overcome the tendency to deformity.

"Deformity is perhaps one of the main reasons why infantile paralysis is generally regarded as such a hopeless condition by the lay public. These deformities occur because of the unopposed action of gravity, overuse of unparalyzed muscles, which destroys muscle balance, and the habitual assumption of faulty attitudes by the patient. Later, these deformities become fixed by shortening of the muscles and ligaments, and finally by changes in the size, shape, and contour of the bones themselves."

"Massage is of some slight value in promoting a better circulation and improvement of the tone of the muscles, but it must not be employed until after the muscles have lost their tenderness. Many times this distressing feature of tenderness of arms and legs, frequent during the early stages of the disease, is prolonged by early massage.

"The most valuable method of treatment is muscle training. This consists of the carefully guided use of muscles to increase their power of contraction. Exercise to a greatly weakened muscle, however, must be given with caution. Overexercise and careless handling of the affected extremities are often more harmful than if nothing were done. Such exercising should be done by physical therapists, trained in anatomy, physiology, and the methods of prevention of deformity."

California Sterilization Law Results.—California has just completed the twenty-fifth year of operation under the eugenic sterilization law signed by Governor James N. Gillett for racial betterment.

In that time 10,123 persons have been sterilized by the state, including 5,146 men and 4,977 women, according to a report issued by the Human Betterment Foundation of Pasadena.

About three-fourths of the persons prevented from propagating their kind to fill prisons and asylums were totally insane and one-fourth were feeble-minded, Dr. Paul Poponoe, secretary of the Foundation, pointed out.

Two medical officials who have been connected directly with the administration of the sterilization for twenty-five years are Dr. Edwin Wayte, medical superintendent of Norwalk State Hospital, and Dr. G. M. Webster, medical superintendent of Patton State Hospital.

Physical Therapy Session at Philadelphia. — The thirteenth annual scientific and clinical session of the American Congress of Physical Therapy will be held in Philadelphia at the Bellevue Stratford, September 10-13, 1934.

This year's session will be especially noteworthy because of the excellent program which has been arranged. Outstanding clinicians and teachers will present the results of the newer researches in the field, emphasizing short-wave therapy, hyperpyrexia, light therapy, remedial exercise, massage, and other interesting subjects. On Wednesday evening, September 12, a joint session will be held with the Philadelphia County Medical Society. Special features will be the scientific and technical exhibits and the small group conferences. The latter have been arranged for Tuesday morning. Every specialty of medicine and surgery will be represented. The technical application of physical measures will be demonstrated and the fundamentals emphasized. The general sessions will be taken up with symposia on cancer, arthritis, poliomyelitis, industrial surgery, etc. Friday, September 14, has been set aside for hospital teaching clinics, which will be held in the leading institutions of Philadelphia.

Physicians and their technicians, properly vouched for, are eligible to attend. For preliminary program, address American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

University of California Hospital Out-Patient Department. — The following memorandum, outlining general procedure governing admissions was recently sent out:

"The primary moral obligation of our clinic as a state-supported institution is to the taxpayers and citizens. We have, however, a very distinct obligation to help maintain the financial and moral integrity of the medical profession. Under these circumstances, it is our policy to reject any applicant who, in our opinion, can afford to pay a private physician's fees.

"In dealing with patients coming from individual members of the medical profession, we should be guided by the following procedures:

"1. If the patient brings a letter of recommendation from a physician, such letter should be considered as presumptive evidence that the patient is eligible.

"2. The usual social service examination should be made, however, and if the applicant is not clearly eligible, he should be referred to the director of the outpatient department for decision as to whether or not extenuating circumstances make it desirable that he be accepted, nevertheless.

"3. The procedure outlined in No. 1 and No. 2 is to be followed with respect to patients asking for hospital service as well as for those asking for clinic service.

"4. In every instance when an applicant applies without a letter from a doctor and it is found that a physician has treated the applicant, then a letter should be sent to the practitioner asking his opinion as to the patient's eligibility, and requesting any further information that he cares to give."

Prize Offered by Geneva Congress.— The sixth International Congress on Industrial Accidents and Diseases offers a prize of one thousand Swiss francs as an award to the author of the best (unpublished) original work on the subject, "The Importance of Previous Physical Condition in Estimating the Sequelae of an Industrial Accident." Physicians in all countries are permitted to take part. Manuscripts must be in hand by December 31, 1934. The award will be made at the time of the seventh congress, to be held in Brussels, mid-July, 1935. Those interested should communicate with Dr. Emery R. Hayhurst, Ohio Health Department, Columbus.

University of California Medical School—Faculty Appointments.—The members of the faculty listed below have been promoted, effective July 1, 1934:

E. L. Munson, lecturer in preventive medicine and public health, to professor of preventive medicine.

E. B. Shaw, assistant clinical professor of pediatrics, to associate clinical professor of pediatrics.

N. Shock, research associate in physiology, to assistant professor of physiology.

H. H. Anderson, instructor in pharmacology, to assistant clinical professor of pharmacology.

K. O. Haldeman, instructor in orthopedic surgery, to assistant clinical professor of orthopedic surgery.

H. D. Crall, assistant in urology, to instructor in urology.

A. H. Heald, assistant in roentgenology, to instructor in pathology and roentgenology.

F. Kellogg, assistant in medicine, to instructor in medicine.

Following are new appointments for the year 1934-1935:

R. D. Friedlander, instructor in medicine.

H. M. Hand, instructor in medicine.

Following are some of the appointments made during the year 1933-1934:

A. J. Bayley, professor of medical military science and tactics.

Frances Baker, instructor in orthopedic surgery.

F. G. Novy, instructor in dermatology.

C. C. Odom, lecturer in psychiatry.

Headquarters-Library Building of the Los Angeles County Medical Association Well on to Completion.— The Association "Bulletin" of August 2 prints the following item: "The library and permanent quarters buildings of the Los Angeles County Medical Association will be completed by September 1, according to the construction company officials. With occupancy of these buildings, general meetings of the Association will be resumed. They are being planned to be of genuine significance to every member. Watch this space for announcement of the house-warming celebration."

California Court Decision Regarding Nurse Anesthetists.—The Los Angeles *Herald-Express* of August 1, 1934, printed the following item:

Court O. K.'s Nurse as Anesthetist.—"A nurse is privileged under California law to administer anesthetics, according to a Superior Court ruling on file today.

"The ruling, of wide importance to the medical profession, was issued by Superior Judge Allan B. Campbell, sitting by assignment from Kern County, in denying an injunction to three physicians who sought to prevent Miss Dagmar A. Nelson, a nurse, from such practice. The suit was in the nature of a friendly action.

" 'Acts of the defendant, under the evidence introduced in this case, do not constitute the practice of medicine or surgery under the Medical Practice Act,' Judge Campbell held."

The American College of Physicians.—The American College of Physicians will hold its nineteenth annual clinical session in Philadelphia, April 29 to May 3, 1935.

Announcement of these dates is made particularly with a view not only of apprising physicians generally of the meeting, but also to prevent conflicting dates with other societies that are now arranging their 1935 meetings.

Dr. Jonathan C. Meakins of Montreal, Quebec, is president of the American College of Physicians, and will arrange the program of general sessions. Dr. Alfred Stengel, vice-president in charge of medical affairs of the University of Pennsylvania, has been appointed general chairman of local arrangements, and will be in charge of the program of clinics. Mr. E. R. Loveland, executive secretary, 133-135 South Thirty-sixth Street, Philadelphia, Pennsylvania, is in charge of general and business arrangements, and may be addressed concerning any feature of the forthcoming session.

Causes of Cold and Pneumonia.—"Is medical science placing too much dependence on bacteria and on filterable viruses as the causes of disease?

"This question was raised before the section of epidemiology of the American Association for the Advancement of Science recently by two physicians on the staff of the University of California, Professor William J. Kerr and Dr. John D. Lagen.

"They reported that experiments which they have made on the transmissibility of the common cold led them to doubt that it is infectious, and suggest that the general adaptability of the body to a changing environment may be the inciting cause not only of colds but possibly of other diseases of the lower respiratory tract, including pharyngitis, laryngitis, bronchitis, and even pneumonia.

"Pointing out that for the past thirty years there has been a trend away from the idea of a bacterial origin of many diseases, the authors of the report stated that while bacteria may be a cause of secondary complications in the respiratory tract, and filterable viruses may sometimes play a primary rôle, environmental factors and the general body responses to them must be considered as preparing the soil to a greater degree than heretofore.

"The basis of the report made by Doctors Kerr and Lagen was a series of tests carried on in the University of California Hospital. A number of men having a history of high susceptibility to colds were placed in an isolated room under controlled temperature and humidity conditions. Then attempts were made to infect them with colds both by introducing individuals suffering from colds into the room, and by direct inoculation. But all these attempts to transmit colds failed. Also a careful study was made of the history of 1,500 cases of common cold.

"In conclusion, the University men said: 'The frequent recurrence of the common cold in susceptible individuals, its seasonal occurrence, the absence of fever and white blood cell increase in the early stage, are points against an infectious origin. We feel that the excessive cooling power of the air at certain times, acting upon the body when the skin pores are open through excessive exertion, fatigue or environmental factors themselves, all of which allow heat to dissipate readily through the skin, will, in the susceptible individual, produce a common cold. The lack of immunity or resistance, likewise seen in many common diseases of the lower respiratory tract, including pharyngitis, laryngitis, bronchitis, and even pneumonia, suggests that perhaps all of them may be initiated by another factor besides infection.'

"Further studies to check this theory concerning the cause of colds and perhaps other respiratory troubles, will be made in the immediate future."

CORRESPONDENCE

Subject of following letter: A communication from Director of Public Health Geiger of San Francisco on subject of compensation for hospital employees contracting poliomyelitis.

To the Editor:—Your editorial in California and Western Medicine, page 50, volume 41, number 1, with reference to compensation to employees of county hospitals who might come down with the disease because of contact, interested us very much.

Through the auditor of this department, Mr. P. R. Hennessy, and Mr. Ralph R. Nelson, secretary actuary of the San Francisco City and County Employees' Retirement System, the following general statement was obtained.

"In the cases of internes, house officers, student nurses contracting a communicable disease such as poliomyelitis while working with these cases, it would be considered an industrial accident and in the event of disability they would receive industrial accident compensation based on probable future earnings, the internes and house officers on a reasonable income, the student nurse on an income she would receive after graduation. The circumstances of each individual will have to govern each case."

I thought this might be of interest to you accordingly.

Fortunately, although over one-third of the cases of poliomyelitis in the recent increased incidence were taken care of in the City and County Hospital of San Francisco, no contact cases arose amongst employees.

With kindest regards, I am

Sincerely,

J. C. Geiger, M. D.,

July 23, 1934. *Director.*

* * *

Subsequent to the receipt of the above, the following letter was received from Director Geiger:

Dear Doctor Geiger:—Thank you for the note of July 24, 1934, transmitting a copy of your letter to Doctor Kress about the method of handling poliomyelitis cases among city employees arising from the performance of their duty.

The statement made in your letter to Doctor Kress is entirely correct if you were referring to permanent disabilities. A nurse, for example, who has poliomyelitis, incurred in performance of duty, and suffering a permanent disability of 15 per cent, would be entitled to sixty weeks' compensation benefit on the basis of the earnings of a graduate nurse.

On the contrary, if the nurse suffered only a temporary disability, with no permanent effects, then she would receive compensation during the period of disability, based on her earnings as a student nurse. At the San Francisco Hospital those earnings would be $10 per month cash, plus $27.50 as the value of allowances.

Generally, the theory of compensation is that it reimburses for loss of wages. A temporary disability causes only the loss of the student nurse's earnings. A disability lasting throughout life affects the earnings after graduation and consequently the benefits should take into account the earnings at that time.

Yours truly,

Ralph R. Nelson,

Secretary Actuary, Retirement Board of San Francisco.

Subject of following letter: Exception taken to statements in Doctor Kessel's "Amebiasis" article.

To the Editor:—There are several statements in the article entitled "Amebiasis" by Dr. John F. Kessel in California and Western Medicine, July, 1934, page 46, to which I must take exception.

1. The entire presumption that the Chicago epidemic of amebiasis was related to food handlers seems to be without support in fact.

2. I cannot agree at all that the pathology induced in kittens by artificial infection with amebas has any relation to human pathology, and I very decidedly disagree with the statement, "These animals (rats, mice, dogs, the domestic pig, and monkeys) may occasionally serve as sources of infection to man." I should like to see definite proof of these propositions.

3. The relation of the food handler to the epidemiology of amebiasis is largely unknown, and it is difficult to agree with the statement that in well-sewered cities the food handler is the source of greatest danger.

4. I disagree entirely with the statement that there are no extensive surveys giving the incidence of amebiasis in our general population. There are on record a considerable number of extensive and authoritative surveys which do give exactly this information. In this connection, I might wish that the author had read the paper by Johnstone, David and Reed, to which he refers briefly, when it would have been most evident that the survey of one thousand prisoners in San Quentin most decidedly did not represent an institutional incidence, inasmuch as these men were consecutive new admissions.

5. Finally, I think the advice at the termination of the article in question that the chief objective of the health officer, with reference to amebiasis, should be the examination of food handlers, is entirely unsubstantiated and probably contrary to fact.

Very truly yours,
ALFRED C. REED.

* * *

Doctor Kessel's reply to Doctor Reed's letter is as follows:

To the Editor:—1. My comment on the etiology of amebiasis, published in the July, 1934, number of CALIFORNIA AND WESTERN MEDICINE, was written last fall before recent reports were submitted which point out the rôle of sewage defects in the Chicago amebiasis outbreak. These findings do emphasize the sewage factor not only in the transmission of amebiasis, but in the transmission of other fecal-borne diseases as well, and it is hoped that this experience will be helpful in bringing about the plumbing and sewage fixture reform necessary in much of our sanitary equipment.

2. Sewage problems, though important, do not eliminate carriers or food handlers as factors in the transmission of amebiasis. Without carriers any disease would soon disappear, and the recent trend to minimize the importance of the carrier has not been proved to be justifiable. Even Doctor Reed and his associates have made the following statements during the last year: "Amebiasis is essentially endemic and probably the most important single method of spread is by infested food handlers." [1] "It is our belief that reinfection is more important than relapse, and that the chief spread of amebiasis is by food handlers." [2] "The housewife or food handler of the family or hotel or restaurant must always be under observation when amebiasis comes into account. Personal hygiene, clean hands, avoidance of contamination of food and drink are the best means of prevention." [3] This last quotation is from the same symposium in the recent number of CALIFORNIA AND WESTERN MEDICINE, in which my comment appeared. These statements do not indicate that Doctor Reed's views and my own, with reference to food handlers, have in the past been greatly at variance, and one wonders what the factors are which have brought about the sudden change in Doctor Reed's point of view.

It would appear that his criticism does not actually minimize the carrier and food handler as factors in the dissemination of amebiasis, but rather that he objects to the routine examination of food handlers. It is true that my most intimate contacts with amebiasis carriers have been in two large medical and hospital institutions, first in Peiping Union Medical College in the Orient, where the incidence of amebiasis is higher than in the United States, where special precautions were taken in the examination of servants and hospital employees, and, second, in the large Los Angeles County Hospital, where some fifteen thousand meals are served each day. Here food handlers are examined not only for intestinal protozoa, but for pathogenic intestinal bacteria as well. The number of carriers found by these examinations has always seemed to justify the effort expended.

It is true that routine examination of food handlers, made imperative by a health department, always involves many administrative difficulties, and whether such requirements are worth the effort expended is a question for the health departments to decide. It would seem that the carrier problem in amebiasis presents similar aspects to the carrier problem in typhoid fever and bacillary dysentery.

3. The second point of objection by Doctor Reed has to do with the use of the kitten as an animal to test the virulence of amebae. It is true that substitution of experimental animals for human subjects in the whole field of human infectious diseases often makes the results difficult to evaluate, but in our present state of civilization it is unusual to obtain human subjects for such experimental purposes. Kittens have been shown to develop amebiasis when infected with amebae either from acute cases or from carriers, and the kitten has been used for most of the experimental work in amebiasis in recent years. If the kitten is to be discarded as an experimental animal in amebiasis, a reevaluation of the whole subject is called for and the burden of proof is on the one who discards the old standards. The other laboratory animals were mentioned merely as occasional reservoir hosts. There is ample experimental proof that these animals may be infected with E. histolytica from man. The converse experiment of transferring Endamoeba histolytica from animals to man may readily be assumed, but has not been done since human volunteers are rare.

4. There was no intent on my part to depreciate the value of the excellent survey of Doctor Reed and his associates in the San Quentin prison. This is an important link in our chain of knowledge concerning the incidence of amebiasis in California. My only point was to suggest that similar surveys among other groups of our population should be undertaken before the picture can be complete. It is my personal impression that the incidence of 9.8 per cent of Endameba histolytica, recorded by myself in 1930 for a particular hospital group, and the 9.2 per cent recorded by Doctor Reed in his recent survey, will be found to be higher than the actual average percentage throughout the state of California. Unpublished surveys among several scattered groups in the southern part of California show an incidence well under 3 per cent, and it would seem that when a general cross section, which I admit is very difficult to obtain, is taken throughout the state, that our incidence will be much lower than is now assumed. I shall not be surprised to find it even under 5 per cent. Such a statement, of course, needs supplementary proof.

Sincerely yours,
JOHN F. KESSEL.

* * *

Doctor Reed's closing comments follow:

To the Editor:—Under No. 3, above, Doctor Kessel refers to kitten experimentation in amebiasis as a standard. This has never been accepted generally and is not now. I am still looking for proof that any animal at any time is a "reservoir host" for human amebiasis. The "converse experiment" (of infecting man from animals) certainly cannot be "assumed" on the basis of any present experimental work. Doctor Kessel does not discuss the claim that our San Quentin survey really gave an adequate cross section of the general population. Sincerely,
ALFRED C. REED.

[1] Johnstone, H. G., David, N. A., and Reed, A. C.: A Protozoal Survey of One Thousand Prisoners. With clinical data of ninety-two cases of amebiasis, J. A. M. A., 100:728, 1933.

[2] Reed, Alfred C., and Johnstone, Herbert G.: Amebiasis Among One Thousand Prisoners. Final report. Am. Jour. Trop. Med., 14:181, 1934.

[3] Reed, Alfred C.: Clinical Amebiasis. Cal. and West. Med., 41:49, 1934.

POLIOMYELITIS**

TABLE 1.—The following report was submitted by Doctor Dunshee of the California State Department of Public Health at the Board meeting on July 28. It shows the distribution of poliomyelitis cases in the present epidemic, from January, 1934, through the week ending July 21:

*County**	*January*	*February*	*March*	*April*	*May*	*June*	*July†*	*Total*
Alameda	..	1	..	1	4	128	36	170
Butte	..	..	..	..	..	..	2	2
Calaveras	..	..	..	..	2	..	..	2
Contra Costa	..	..	..	..	..	12	5	17
Eldorado	..	..	..	..	..	..	1	1
Fresno	1	1	..	..	3	27	58	90
Glenn	..	..	..	..	..	..	1	1
Imperial	..	..	..	1	1	1	..	3
Inyo	1	..	..	..	4	2	1	8
Kern	..	..	..	2	..	2	2	6
Los Angeles‡	4	9	4	14	98	336	161	626
Los Angeles City	7	3	9	7	171	493	248	938
Madera	..	..	..	..	..	1	..	1
Marin	..	1	..	..	1	11	..	13
Monterey	1	..	..	..	..	..	11	12
Napa	..	..	..	..	..	2	1	3
Orange	..	1	..	3	14	16	3	37
Placer	..	..	..	..	..	..	3	3
Plumas	1	..	..	..	..	..	..	1
Riverside	1	1	2	2	2	2	..	10
Sacramento	..	..	..	..	2	2	8	12
San Bernardino	3	3	..	2	2	6	2	18
San Diego	1	1	1	..	..	4	12	19
San Francisco	1	2	..	1	8	69	22	103
San Joaquin	..	1	..	..	1	10	5	17
San Luis Obispo	..	..	..	..	1	1	..	2
San Mateo	2	..	..	2	..	19	10	33
Santa Barbara	..	..	..	..	1	4	4	9
Santa Clara	..	..	..	1	..	17	10	28
Solano	1	..	..	..	..	1	2	4
Sonoma	..	1	1	..	1	2	4	9
Stanislaus	..	..	..	..	1	6	5	12
Sutter	..	..	..	..	..	..	3	3
Tulare	..	..	..	..	1	12	14	27
Tuolumne	..	..	..	..	..	..	5	5
Ventura	..	1	..	1	1	1	1	5
Yolo	..	..	..	..	..	1	1	2
Yuba	..	..	..	..	..	1	5	6
California§	1	..	1	..	..	3	3	8
	25	26	18	37	319	1,192	649	2,266

* Only counties reporting cases of poliomyelitis are listed.
† Through week ending July 21.
‡ Los Angeles County, exclusive of Los Angeles City.
§ Cases charged to "California" represent patients ill before entering the State or those who contracted their illness traveling about the State throughout the incubation period of the disease. These cases are not chargeable to any one locality.

Excerpts from a Report to the California State Department of Public Health

TABLE 2.—The distribution of poliomyelitis cases, by counties and subdivisions thereof, for the twenty-ninth week, ending July 21, 1934, is as follows:

Alameda County:		
Berkeley	1	
Emeryville	1	
Oakland	1	3
Butte County:		
Bangor	1	
Brush Creek	1	2
Contra Costa County:		
Brentwood	1	
Richmond	1	2
Fresno County:		
Calwa	1	
Carruthers	1	
Fresno rural	2	
Parlier	1	
Rockhaven	1	
Fresno	8	
Reedley	2	
Selma	1	17
Glenn County:		
Willows	1	1
Los Angeles County:		
Altadena	1	
Baldwin Park	1	
Belvedere	5	
Calabasas Precinct	1	
Cudahy	1	
El Monte Precinct	1	
Lawndale Precinct	1	
Laguna Precinct	6	
Pico Park	1	
Rivera Precinct	1	
San Gabriel Precinct	1	
South Whittier Precinct	1	
Walnut Park Precinct	1	
West Hollywood	2	
Alhambra	1	
Culver City	1	
Huntington Park	1	
Long Beach	2	
Los Angeles	61	
Montebello	1	
Pasadena	4	
Pomona	2	
San Fernando	1	
Santa Monica	3	
Hawthorne	1	
Monterey Park	1	103
Monterey County:		
Monterey	1	
Pacific Grove	1	2
Napa County:		
Stags Leap	1	1
Placer County:		
Sheridan	1	1
Sacramento County:		
Sacramento	3	3
San Diego County:		
San Diego	1	1
San Francisco	2	2
San Joaquin County:		
Ripon rural	2	2
San Mateo County:		
Millbrae	1	
San Bruno	1	2
Santa Clara County:		
Alum Rock, San Jose rural	1	1
Sonoma County:		
Sonoma rural	1	
Petaluma	1	2
Stanislaus County:		
Modesto	3	3
Sutter County:		
Tisdale Ranch, District 70	1	
Yuba City	1	2
Tulare County:		
Pixley	2	
Tulare rural	1	3
Tuolumne County:		
Tuolumne	1	1
Ventura County:		
Ventura	1	1
Yuba County:		
Marysville rural	1	
Marysville	2	3
Total		158

** See, also, editorial comment in this issue, page 127.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VII, No. 12, August, 1909

From Some Editorial Notes:

Suits for Malpractice.—In the vast majority of cases, suits for malpractice are nothing more nor less than attempts at blackmail. A great many of them are brought, not with the idea of really fighting them in court, but as a means to make the physician compromise by paying a few hundreds of dollars and thus have the suit stopped. . . .

* * *

Medical Defense.—On June 24, 1909, the Council of the state society had a special meeting to consider plans for medical defense, acting under instructions from the House of Delegates. After a very careful discussion of the question, it was decided by the Council to undertake the work at once. . . .

* * *

Simplified Osteopathy.—Judging from the number of copies that have been sent to the *Journal* office, every physician in the state must have received the very remarkable circular letter sent out by the "Union College of Osteopathy," apparently located at Wheeling, West Virginia. The offer contained in the circular is supposed to be very flattering; you are to be taught osteopathy by mail at the modest cost of $60 for the course, including the beautiful diploma. . . .

* * *

License Reciprocity.—The subject of reciprocity between the states in the matter of license to practice medicine is discussed most sanely by Dr. John C. King of Banning, in a recent issue of the *Southern California Practitioner*. . . . Doctor King's point is that physicians who do not keep up their reading and their study should be prevented from treating the sick. He cites the well-known procedure of the Government in dealing with its Army and Navy surgeons; at each stage of their official life they are subjected to examination; it is not assumed that they have kept up; the fact is determined, before promotion, by a rigid examination. . . .

* * *

The Same Pitfall.—The attempt to get physicians financially interested in concerns, either good, bad or indifferent, which manufacture the things that physicians use, is as old as the hills. The argument is always the same. . . .

* * *

School Hygiene.—A most notable advance has recently been made in the work of giving proper medical supervision to school children. The subject has been commented upon and commended a number of times in the *Journal,* and the good work that has been done by Doctor Hoag in Pasadena has attracted no little attention. . . .

From an article on "Psychotherapy" by W. Jarvis Barlow, M. D., Los Angeles.

The time has come when the interest in psychotherapy is being seriously considered by the medical profession, and discussions of this subject by physicians no longer bring to their hearers the suggestion that we are getting away from the scientific treatment of patients into the field of cultism. . . .

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and new members.

(Contined in Front Advertising Section Page 12)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

By Charles B. Pinkham, M. D.
Secretary-Treasurer

News Items

Official Actions by the Board:

At a regular meeting of the Board of Medical Examiners held at Native Sons Hall, San Francisco, July 9 to 12, inclusive, 144 applicants wrote the examination, of which approximately twenty-two were chiropodists. The following were changes made in the status of licentiates:

Harvey P. Charles, M. D., Berkeley (mentioned in July, 1934, "News Items"). Revoked July 11, 1934, following testimony of two women. Based on prior testimony of one of the women, Doctor Charles was assertedly committed to jail in Berkeley on a charge of battery.

Will H. Coleman, naturopath, Los Angeles, charged with practicing beyond the limitation of his license. Revoked July 12, 1934.

Leman Dow Cruice, M. D., formerly of San Diego (mentioned in July, 1934, "News Items"). Revoked July 12, 1934. Based upon the record of his conviction of violation of the Harrison Narcotic Act. Incarceration in the United States penitentiary, McNeil Island.

Oscar W. DeVaughn, M. D., colored physician of Oakland (mentioned in July, 1934, "News Items"). Revoked July 11, 1934, following his conviction of second degree murder in connection with an alleged illegal operation. The records show that he had also been convicted of subornation of perjury, he assertedly having supplied with narcotics a woman witness who testified in his behalf at his first trial.

George B. Dewees, M. D., formerly of Fresno. Revoked July 10, 1934, following a hearing before the Board for violation of the terms of his probation, he on October 19, 1933, having been placed on probation for five years.

Manuel M. Doria, Jr., M. D., San Diego physician, charged with habitual intemperance, now located in Mexico. Revoked July 12, 1934.

Victor Sheldon-Smith, M. D., operating the San Francisco office of the Viscose Ambulatorium. Revoked July 11, 1934, on a charge of deceptive advertising.

The licenses of two other physicians, both of Los Angeles, were revoked. However, service of a writ of review on the Board of Medical Examiners, issued by order of Superior Judge Emmet H. Wilson of Los Angeles, prohibits the giving of any information relating thereto.

Egbert G. Johnson, M. D., Los Angeles, was on July 11, 1934, placed on probation for three years after a hearing of charges of alleged deceptive advertising.

Axel O. Lindstrom, naturopath, San Francisco, was on July 10, 1934, placed on probation for five years following a hearing of charges that he aided and abetted an unlicensed practitioner who operated the Gillberg Institute, 406 Sutter Street, San Francisco.

Edward S. Moulton, M. D., Corning, was on July 11, 1934, placed on probation for five years without narcotic privileges, based upon the record of his conviction of violating the State Poison Law re narcotics.

"Starting an active campaign against certain life, health and accident insurance concerns which the District Attorney's office said are suspected of violating the law, investigators late today seized the books and files of the International Travelers' Health and Accident Association. Warrants were issued for arrest of

* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

(Continued in Front Advertising Section Page 14)

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Make a New Year's Resolution.—Bill Jones is home for the holidays; first time in five years. He spoke to us of our neighbor, Si Smith, being "old before his time," and we were surprised and shocked to notice that Si *is* old.

We know the number of Si's years; we know he should not be old, but he is.

Why? Because many years ago, far back in his preschool days, Si had several of the acute diseases of childhood mildly. "Not sick enough to have a doctor," said his parents, "he's strong," and so he was neglected. Some slight damage was done his heart and kidneys. As the years went by, the damage increased, so he is an old man, young in years.

Sam Perkins is seemingly in good health; he goes blithely on his way although he sees his neighbor, whose life is even as his own, fall prematurely by the wayside. "Poor John," he thinks, "had a sudden attack of so-and-so." But John did not; John had reached that point in life where some vital organ could no longer function; it had been injured many years before and, as with the case of Si Smith, overworked because the injury was unknown.

"These things are happening every day," said Dr. H. G. Southard, Director of Health, "and show the value of a periodical physical examination.

"If you make no other New Year's resolution, resolve to go to some competent physician once or twice during 1934 and have him check up on your physical condition. If you are all right, you want to know it; if you are not, it is much more important that you should know and live according to the advice you receive."—*Ohio Health News.*

The Nutritive Superiority of Bread Versus Fads.—Under the title, "The Truth Concerning the Vitamins, Minerals, Whole Wheat and White Breads, Balanced Diets and Dental Bills," Dr. J. W. Read of the Division of Chemical Research gave a most interesting

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paper before a recent gathering of chemists. In the course of his remarks, the speaker took time to correct numerous erroneous and misleading statements that have been made by self-appointed dietitians and health reformers.

Doctor Read emphasized the nutritive superiority of white bread over whole wheat bread as a constant article of the diet. This was definitely shown by many sad experiences resulting from the world-wide feeding tests during the late war. The European nations which compelled their millers to convert 85 to 100 per cent of their wheat into flour in order to make the grain go farther, found their population at the close of the war in a state of general gastro-intestinal disturbance because of the continued consumption of the coarser indigestible material in their breads. When the Armistice was signed, the public and the medical profession demanded a return of the white flour of pre-war days.

If one knows that he has the digestion of a goat, he may consume great gobs of bran, sawdust, hayseed, seaweed, or indigestible wax, and handle it without much inconvenience, but only a few folks appear to have a compound several-chambered stomach designed for cud chewing. The dairy cow greatly loves to exercise her four-chambered stomach on bran and other difficultly digestible feeds, and she is thoroughly capable of extracting the minerals from roughage and returning them to the dining-table in nutritious whole milk. Mother Nature equipped man with a single cavity stomach and never did intend that he should compete with the giraffe, goat, and dairy cow in the consumption of roughage.

There is no reason under heaven why man should adopt the dietary habits of a guinea pig just because cabbage is rich in vitamin C, or restrict his diet to nuts because squirrels do not have appendicitis. The introduction of white flour brought in no new ills of mankind. The stature, strength and health of modern man are far superior to his more or less distant ancestors who consumed whole grain and natural foods just about as nature made them. The whole history of sports is nothing less than a history of broken world records.

The allied soldiers in the trenches ate white bread for the soundest of scientific reasons and they won the war. Every cult which has been hatched up to point its accusing but ignorant finger at white bread, finds itself today without the support of a single scientific reason.—*Food Facts.*

Modern Theories of Nutrition in Relation to Mouth Health.—In the time of the ancient Pharaohs, sick persons were carried to the busiest thoroughfares so that they might receive counsel from persons who had had the same or similar ailments. Today, while advice may still be had cheaply enough and in passing, the greatest problem perhaps is to interpret and evaluate the wealth of authentic health information, keeping constantly in mind that no one theory or no one piece of research can possibly tell the whole story.

As a background from which one may draw his own conclusions, Jessie G. Cole (*Journal of the American Dental Hygienists Association,* June, 1933), nutrition specialist State Department of Health, has reviewed current outstanding theories of nutrition with particular reference to dental caries and pyorrhea. Her summary follows in abridged form:

In general it is agreed that the modern dietary is a factor in dental caries and pyorrhea, probably the two most prevalent diseases of the mouth known to man. At this point, however, opinions diverge. One faction of investigators has for many years contended that attack on the teeth is always from without, that conditions within the body are insignificant. The treatment recommended by this group is prophylaxis, neutralizing the lactic acid produced by the fermentation of food or eliminating *B. acidophilus* from the

(Continued on Next Page)

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(Continued from Preceding Page)

mouth, and the use of an antacid producing dietary. Another, and more modern theory, termed the "vitalistic theory" is that changes or variations in metabolism alter the character of the teeth.

One of the most popular lines of research has been carried on in connection with the part played by various foodstuffs and food factors in the building and maintenance of healthy gingiva.

In England, where there is an enormous prevalence of caries, Mrs. Mellanby seems to have established the fact that there is an anticalcifying factor in cereals, particularly in oatmeal, when cereals predominate in the diet. Her results indicate that the amount of cereal should be limited particularly during infancy and early childhood and that vitamin D is essential for the expectant mother and for the infant from birth, if normal calcification is to take place.

A group of workers in Michigan believes that tooth integrity depends upon the elimination of of sweet foods, thus rducing the medium most favorable to the increase of mouth bacteria. Eddy, of New York, on the other hand, claims that cane suger does not increase mouth bacteria although sugar can "derange digestion, produce a coated tongue, and generally interfere with nutritive processes."

Doctor Hanke, champion of antiscorbutic vitamin C as the most important factor in the prevention of dental disease, prescribed a pint of orange juice and the juice of one lemon as well as lettuce and cabbage in the daily dietary. Hess, probably, our greatest authority on scurvy, is quoted as saying that although dental caries is one of the outstanding signs of scurvy, he believes that Hanke's deductions are "far too sweeping and are not supported by the geographic distribution of dental caries or by a study of individual cases, which all indicate some other dominant etiologic factor.."

Howe and others have shown that tooth structure and tooth regeneration are correlated with vitamin C, its particular rôle being the control of intercellular materials. The presence or absence of other vitamins, A, B, and D, for example, can also change or alter the structure of teeth, but whether they are respon-

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sible for defense against invasion remains to be seen. Eddy claims that a lack of vitamin A affects the stiffening properties of teeth.

McCollum places great stress on the ratio between the calcium, phosphorus and vitamin D content of the diet. Dietaries which tend to maintain a high phosphorus-calcium level of the blood and also contain vitamin D render the individual caries-immune, he claims.

Students of the glands of internal secretion have discovered that these, too, particularly the parathyroids, bear a definite relation to the utilization of mineral substances and hence may influence the health of investing tissues as well as of the tooth itself.

In Miss Cole's opinion the significance of these multifarious views is this: "While we are firmly convinced that diet is a factor in mouth health, we are not yet too positive about what we know. Hygiene concerns itself primarily with the principles of right living as distinguished from therapeutics or the treatment of disease. We believe in the seeming paradox that the best way to cure is to prevent. Our business, thus, is to counsel and advise regarding good dietary principles and to continue the high quality of prophylactic care already established.—*New York Health News.*

The Ancient Urologists.—At a recent meeting of the Budapest Royal Medical Society, Dr. Ivan Kasztriner, a urologist, read a paper on the history of urology. The development of urology has occurred through the centuries. For three thousand years circumcision has been a religious, obligatory ceremony with the Egyptians. In a king's tomb, opened in 1897, evidence of this operation, carved on stone, was found. A papyrus, written between four hundred and five hundred years before the Trojan war, describes how in cases of inability to evacuate the bladder the urine can be removed. In the Ayur-veda, written two thousand years ago, there is a description of vesicotomy. A great impetus was given to urology by Hippocrates. About 400 B. C. he described diseases of the urinary organs, laying special stress on the odor, color, and precipitates in the urine. He wrote also about catheters made of pliable tubular plants and about the way to evacuate an obstructed bladder. He accurately described the symptoms of ureteral calculi. In the ruins of Pompeii a bronze catheter was found in the house of a physician. It was 26 centimeters long and 17 millimeters wide, with adequate curvature.

In ancient Rome, Aurelius Cornelius Celsus (53 B. C. to 7 A. D.), played an important part in the history of urology. His treatise *De medicina libri octo* considers broadly the infirmities of old age. Hippocrates, Celsus, and Galen, all displayed special urologic knowledge. Celsus, in the domain of venerology, contributed to the study of condyloma acuminatum and gonorrhea. He wrote a long chapter about kidney diseases, and disorders of the male reproductive organs and the operative treatment of hydrocele and varicocele. He dealt with the disturbances of urination, catheterism, renal sand, soft stones, and the treatment of calculi. He wrote a special chapter on female vesical calculi.

In the century following Celsus, the leading part was played by Galen, who cleared up several erroneous conceptions in urology. He was an adherent of conservative treatment. He sought the cause of gonorrhea in excessive sexual contacts or in exaggerated abstinence.

The ancient Indo-Babylonian, Assyrian, Syrian, and Greek writers mentioned a disease, the symptoms of which resembled those of gonorrhea. In Moses' books and in the Talmud there are references to gleet, and particularly to prevention by personal cleanliness. The oldest pertinent records in respect of gonorrhea are in the work of Susruta, written in Sanskrit and translated into Latin in the nineteenth century by Dr. Francis Hessler. This reveals that contagious sexual diseases occurred in ancient times.

(Continued on Next Page)

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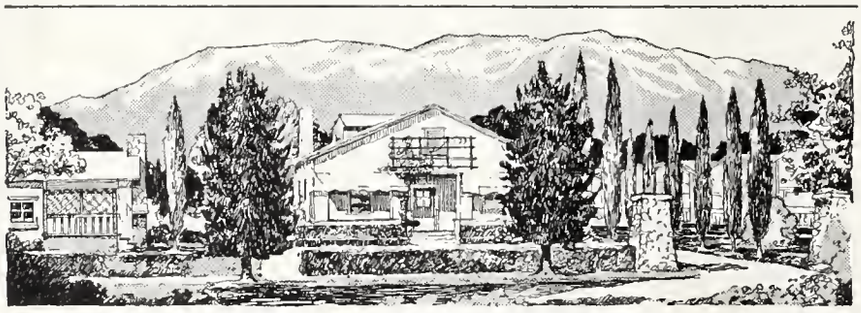

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(Continued from Preceding Page)

While Hippocrates did not mention gonorrhea, some diseases mentioned under different names are identical with it. Dioscorides dealt minutely with the treatment of venereal and urologic disturbances. Plinius wrote a treatise on venereal diseases. He applied external and internal remedies and knew the complications of gonorrhea in women. Oribasius, who lived in the time of the emperor Julian, acting as court physician, used an indwelling catheter, which he prepared from a goose quill and parchment paper. Such catheters he introduced into the urethra for dilation. Paul Aegina first performed bladder irrigation through a catheter. . . . —*Journal of the American Medical Association,* February 10, 1934.)

Fatigue and Diet.—Investigators who have made a special study of fatigue and general debility report that these conditions generally can be corrected by proper diet and rest.

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Diphtheria Prevention in New York City.—Dr. Shirley W. Wynne, who has just retired from office as Health Commissioner of New York City, began an active campaign in the prevention of diphtheria late in 1928. This campaign was waged energetically by the Diphtheria Prevention Commission for a period of three years and during that time, with the assistance of thousands of physicians in New York City, more than half a million children were immunized against the disease. It is estimated that the lives of more than 1,400 children were saved through this effort and, in addition, 17,000 children who probably would have been stricken with the disease under ordinary conditions escaped the infection.

Meanwhile, the New York City Health Department continues the work of prevention against diphtheria. A new low record for the first ten months of 1933 has been established, with only seventy-one diphtheria deaths in the entire city. There were 1,624 cases of diphtheria reported during these ten months. The reduction in the death rate from 1928 to 1932 was 70 per cent. In the Bellevue-Yorkville Health Demonstration, which has coöperated since 1928 with the Department of Health in its campaign against diphtheria, there were only fifty-three cases of this disease reported during the first ten months of 1933 and not a single death occurred from March 7, 1932, to November 28, 1933. Doctor Wynne states: "If we are able to have every child immunized immediately upon reaching his ninth month, it will not be long before diphtheria will be classed as one of the rare diseases."

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American Medical Association, Atlantic City, New Jersey, June 10-14, 1935

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VOLUME 41
NUMBER 3

SEPTEMBER · 1934

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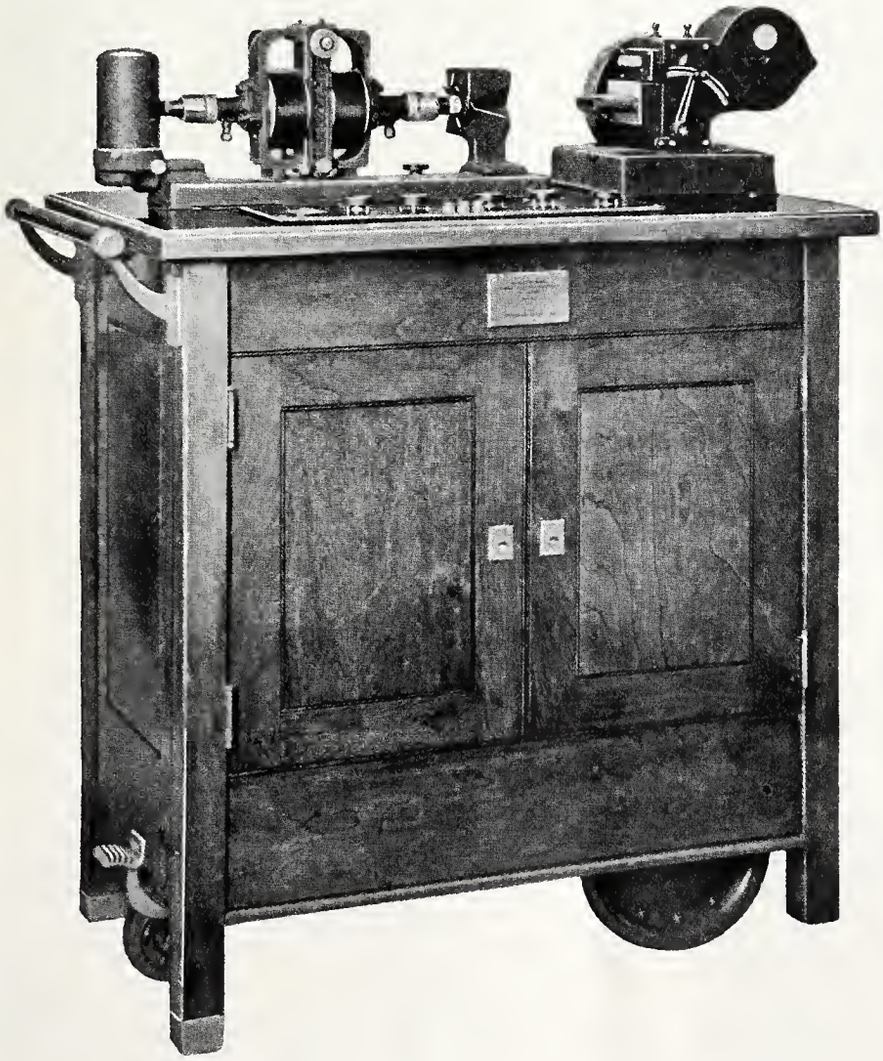

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President, Oscar F. Johnson, 510 Physicians Building, Sacramento.
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President, C. L. Emmons, 206 Emmons Building, Ontario.
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President, Ross S. Carter, 1870 Fourth Avenue, San Diego.
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Secretary, H. H. Ray, 23 Second Avenue, San Mateo.

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Secretary, W. C. Shipley, 533 Mendocino Avenue, Santa Rosa.

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State of California Department of Public Health

San Francisco—State Office Building, McAllister and Larkin Streets. UNderhill 8700.

Sacramento—State Office Building, Tenth and L Streets. CApital 2800.

Los Angeles — State Office Building, 217 West First Street. MAdison 1281.

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Secretary, P. B. Gallegos, 242 North Sutter Street, Stockton.

Pacific Roentgen Club

Chairman, Lowell S. Goin, 1930 Wilshire Boulevard, Los Angeles.

Secretary, L. H. Garland, 450 Sutter Street, San Francisco.

The Public Health League of California

Executive Secretary, Ben H. Read. San Francisco Office, 450 Sutter Street. Los Angeles Office, 438 Chamber of Commerce Building.

Better Health Foundation

President, Reginald Knight Smith, 490 Post Street, San Francisco.

Chairman, Executive Committee, Walter B. Coffey, 65 Market Street, San Francisco.

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The Institutions here listed have announcements in this issue of California and Western Medicine. For Index, see advertising page 8.

CALIFORNIA SANITARIUM
For Treatment of Tuberculosis
Belmont, California

CANYON SANATORIUM
For the Treatment of Tuberculosis
Redwood City, California

COLFAX SCHOOL FOR THE TUBERCULOUS
For the Treatment of Tuberculosis
Colfax, California

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Limited General Hospital
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The Modern Physician Surveys the Economic Changes.—Today the age-old and venerable profession is confronted by myriads of problems and changes in economics. Many physicians are now faced with a new trend in economic pressure that has been brought about by the telephone, automobile, radio, and the industrial age with complicated machinery. The world-wide depression has so wounded the standard of living of the doctor that it will take many years to heal.

Some of the existing conditions which have undermined the doctor's income at present are as follows: Private business corporations use as their keyword to the doctor, when solicited, that their products are only advertised to the practicing physician. After the commercial products have been popularized through the medical man's prescriptions, the promises of these money-making corporations are forgotten. Subsequently, these companies begin advertising campaigns over the radio and, by a series of advertisements in all sorts of periodicals, never forget to mention that the medical profession encourages its use. The city physician has developed a poor habit of writing patent medicines because it helps him to save time by not having to calculate the dosage of all the ingredients. Patients, however, rapidly lose confidence in such practices and soon they learn to ask for such medications over the counter of the drug store. Then we have the unscrupulous advertisers over the radio through which channels much incorrect information is given to the public by quacks who either run their own clinics or are highly paid by commercial enterprises.

The physician as a rule volunteers without charge to treat deserving poor patients in dispensaries, but the hospitals, however, do not have adequate social service assistance to investigate those who do not deserve charity. Nevertheless, there is unfairness on the part of a good number of hospitals in not protecting the physician's economic status.

At times the medical profession is exploited by several small private incompetent health insurance companies which work on a basis of profit. The companies of varied sources offer doctors very small annual fees and in return large numbers of families are attended by the overworked and underpaid poor physician, who usually does a very inferior type of work because of the tremendous amount of petty responsibilities.

There are various groups and cults taking advantage of the doctors' lack of interest in the welfare of the medical profession, and so these strings of cults are constantly exploiting humans in their misery for their financial gain. The medical societies are weak without the individual physician's interest and understanding, as there must be concerted effort on the part of the medical profession to help solve these problems rather than allow those who are out of the profession to dictate what ought to be done. . . .—M. Martin Kafka, M. D., in the New York *Medical Week*, March 3, 1934.

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BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

Medicine Marches On. By Edward Podolsky, M. D. Cloth. Pp. 343. Price, $3.50. New York and London: Harper Brothers, publishers, 1934.

A Textbook of Gynecology. By Arthur Hale Curtis, M. D., Professor and Head of the Department of Obsetrics and Gynecology, Northwestern University Medical School; Chief of Staff and Chief of the Gynecological Service, Passavant Memorial Hospital, Chicago. Second edition, reset. Cloth. Pp. 493, with 300 illustrations, chiefly by Tom Jones. Price, $6 net. Philadelphia and London: W. B. Saunders Company, 1934.

The Prospective Mother. A Handbook for Women During Pregnancy. By J. Morris Slemons, M. D., Sometime Associate Professor of Obstetrics, Johns Hopkins University, Professor of Obstetrics and Gynecology, Univerity of California, Professor of Obstetrics and Gynecology, Yale University. Third edition. Cloth. Pp. 311. Price, $2. New York and London: D. Appleton-Century Company, Inc., 1934.

The Dangerous Age in Men. A Treatise on the Prostate Gland. By Chester Tilton Stone, M. D. Cloth. Pp. 105. Price, $1.75. New York: The Macmillan Company, 1934.

The Spastic Child. A Record of Successfully Achieved Muscle Control in Little's Disease. By Marguerite K. Fischel. Cloth. Pp. 97. Price, $1.50. St. Louis: The C. V. Mosby Company, 1934.

The Power to Love. A Psychic and Physiologic Study of Regeneration. By Edwin W. Hirsch, B. S., M. D., Associate in Urology, College of Medicine, University of Illinois. Cloth. Pp. 363. Price, $4. New York: Alfred A. Knopf, 1934.

A Primer for Diabetic Patients. A Brief Outline of the Treatment of Diabetes with Diet and Insulin, Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions. By Russell M. Wilder, M. D., Professor and Chief of the Department of Medicine of The Mayo Foundation, University of Minnesota; Head of Section on General Metabolism, Division of Medicine, the Mayo Clinic. Fifth edition, reset. Cloth. Pp. 172. Price, $1.75 net. Philadelphia and London: W. B. Saunders Company, 1934.

Lane Medical Lectures: Biochemical Studies of Nutritional Problems. By J. C. Drummond, Professor of Biochemistry, University College, University of London. Paper. Pp. 106. Price, $1. Stanford University: Stanford University Press, 1934.

The Laboratory Notebook Method in Teaching Physical Diagnosis and Clinical History Recording. By Logan Clendening, M. D., Professor of Clinical Medicine in the University of Kansas. Paper. Pp. 71. Price, 50 cents. St. Louis: The C. V. Mosby Company, 1934.

Postures and Practices During Labor Among Primitive Peoples. Adaptations to Modern Obstetrics, with Chapters on Taboos. Superstitions, Postpartum Gymnastics. By Julius Jarcho, M. D., F. A. C. S., New York. Cloth. Pp. 175, with 130 illustrations. Price, $3.50. New York: Paul B. Hoeber, Inc., 1934.

Lumbalanasthesie in der Geburtshilfe und Gynakologie. Mit Besonderer Berücksichtigung der Biochemie des Liquors und der Blutliquorschranke. Von Dr. Ernst Preissecker, Assistent der II. Univ.-Frauenklinik Wien (Prof. W. Weibel) Mit Einem Vorwort von Prof. Dr. W. Weibel. Mit 2 Abbildungen im Text und 3 Farbigen Tafeln. Wien: Verlag von Wilhelm Maudrich, 1934.

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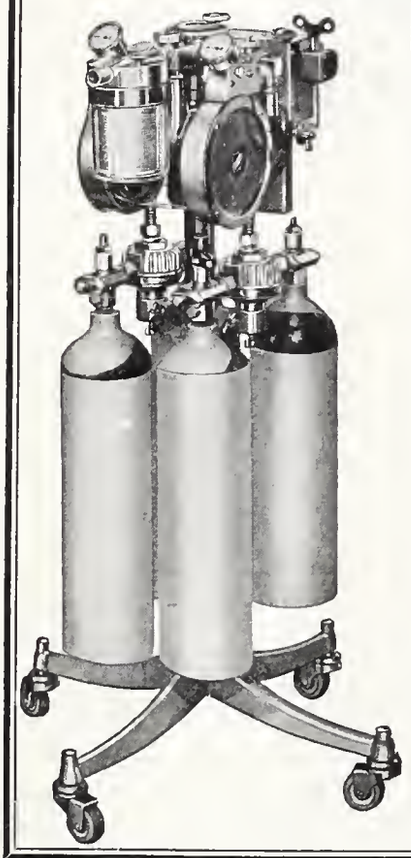

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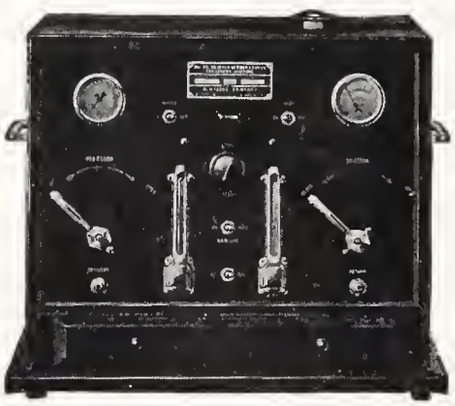

See These Articles on Elliott Technic in Pelvic Inflammatory Diseases

Holden and Gurnee, Am. Jour. Obs. & Gyn., July, 1931.
Holden and Sovak, Am. Jour. Obs. & Gyn., Nov., 1932.
Counseller, Jour. A. M. A., Sept. 16, 1933.
Graham, Am. Jour. Surg., June, 1933.
Stone, Am. Jour. Physical Therapy, April, 1932.
Jacobs, St. Louis Med. Soc. Bulletin; discussion by Vaughan and Gellhorn, June 5, 1931.
Holliday, Jour. of Dental Research, Dec., 1932.
Shullman, Jour. of Med. Soc. of New Jersey, 1933.

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BOOK REVIEWS

External Diseases of the Eye. By Donald T. Atkinson, M. D. Pp. 704. Illustrated. Lea and Febiger, 1934. Price, $7.50.

The title is a misnomer, since almost every condition which comes to the oculist's attention except diseases of the retina and optic nerve is at least mentioned. The book is notable for the excellence of its illustrations, the best of which were drawn by the author himself, and also for the inadequacy and bad selection of its subject matter. It seems illogical in the extreme to write a book on external diseases for any class of readers without reference to the fund of information which has been made available by the Slit Lamp and corneal microscope.

One misses the thoroughness and classic precision of the older texts. Let us take, for example, the section on chalazion. Too much space is wasted in advising the surgeon to warn the patient that a lump will persist after the lesion is opened and curetted. It could be better employed in describing how to use local anesthesia (no anesthetic is mentioned for this purpose, so presumably none is used by the author) and how to dissect the lesions out so that no lump will be left and recurrences will be rare. It is also difficult to understand how the yellow oxid of mercury can be of the slightest use in such cases.

A similar criticism of the section on foreign bodies in the cornea is in order. If more care and precision were used in removing them, the complications to which much space is devoted, would be rarer. Apparently no bandage is applied to cases in which the foreign body is "swept away with a cotton pledget," although such a procedure usually sweeps away a large area of epithelium and exposes the stroma to infection. In the more deep-seated foreign bodies in which "this procedure fails" it is certainly not necessary to annoy every patient with atropin and the advisability of frequent irrigations with boric acid may well be questioned. If all foreign bodies are neatly removed with a proper spud and the eye is bandaged close in each case and the potential infection is left to the remarkable lytic powers of the enzymes contained in the tears, the results will be better.

As we ascend to the more complex phases of ophthalmology we find glaucoma discussed without reference to the fields of vision or to Elliot's sclerocorneal trephining operation; dacryocystitis is discussed without reference to the Toti-Mosher operation; ptosis without reference to the Motais operation; cataract without reference to the intracapsular method and while Roderic O'Connor's work

(Continued on Page 14)

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BOOK REVIEWS

(Continued from Page 12)

is mentioned in the bibliography of the chapter on strabismus, we look in vain for any account of his valuable technic. The chapter on ocular palsies is so inadequate that it could easily have been omitted.

Taken as a whole, the book is an interesting ophthalmological atavism which should be preserved in libraries, but carefully kept out of the hands of credulous practitioners and students. G. N. H.

Diseases of the Skin. By Oliver S. Ormsby. Fourth edition. Philadelphia: Lea and Febiger, 1934.

A new edition of Ormsby's excellent book on Diseases of the Skin has come out.

The author, well known for his industry and thoroughness, has endeavored to make this work as complete as possible within the limits of a manageable volume. This is in itself an ambitious effort, as there seems to be no end to the list of subjects in this department of medicine. To each subject also there is appended an extensive and well chosen bibliography.

The comprehensiveness of the work is an excellent quality in many respects, as it enables those who are not conversant with many skin diseases to arrive at a diagnosis, and it also enables even those who are so trained to find their way in this maze. Indeed for a man who is a trained dermatologist it is a valuable discipline to read through such a book, composed by a man well versed both in the literature and in the practice of his specialty. The human brain is no "fast plate," and both impressions and memory quickly blur, and an orderly resuscitation of memories is of benefit to all of us.

Another feature that renders this work valuable for the man who is in general work is a good description of the drug eruptions. So many eruption-producing drugs are now prescribed by physicians, or by druggists and dentists, or taken independently by the public that no physician may ignore them. There are also the reactions induced in the industries, so important for physicians engaged in industrial work.

Surgeons, with their habitual disdain for anything not surgical, and especially for diseases of the skin, may learn not to operate for gallstones on a patient having Quincke's angio-neurotic edema. They may also be brought to see how infructuous it is to extirpate a tuber-

(Continued on Page 16)

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BOOK REVIEWS

(Continued from Page 14)

ous bromid or iodid lesion, under the impression that it is an epithelioma. In other words, there is nothing unimportant in any department of medicine to any physician, no matter in what department his special work may be.

Among the new procedures mentioned probably the use of cobalt glass in rendering more distinct the roseola of syphilis, often so faint and indefinite, is one of the most interesting. D. W. M.

Modern Clinical Syphilology. By John H. Stokes. Philadelphia and London: W. B. Saunders Company, 1934.

A new edition of Stokes' Syphilology is out. The term syphilology in this connection is interesting. Literally it is as if one would say "A word (logos) about syphilis." It is more than a "word"; it is a good stout volume, and had to be condensed at that, both in regard to the print, much of which is in small type, and in regard to the subject, and yet the ingenuity spent in condensing is such that it does not interfere either with ease of reading or the curtailment of the subject matter. Certainly much time and labor was spent, and well spent, in achieving this desirable end. This reminds me that the poet, Lessing, once wrote quite a lengthy letter to a friend, and excused himself, saying that he had not had time to make it shorter.

There are various ways of condensing, one of which is to write choppy sentences with the slenderest intellectual connection. Such books are about as easy to read as a dictionary, and make one exclaim with the Prophet: "Hath the nurse holden out the bosom, and is there nothing but wind in it!" Much time, trouble and money would be saved on medical education if the text books were generally written as well as this one.

An adequate number of well chosen photographs are given with accompanying explanations. Good photographs are undoubtedly a help, especially in diseases of the skin, as they aid the visual memory, which so frequently is so fleeting and deceptive. However, one must not trust to illustrations, no matter how good. They should only serve to recall more definitely what one has already seen in life.

An interesting feature of this book is the effort to give in as short a space as possible an intelligent view of

(Continued on Page 18)

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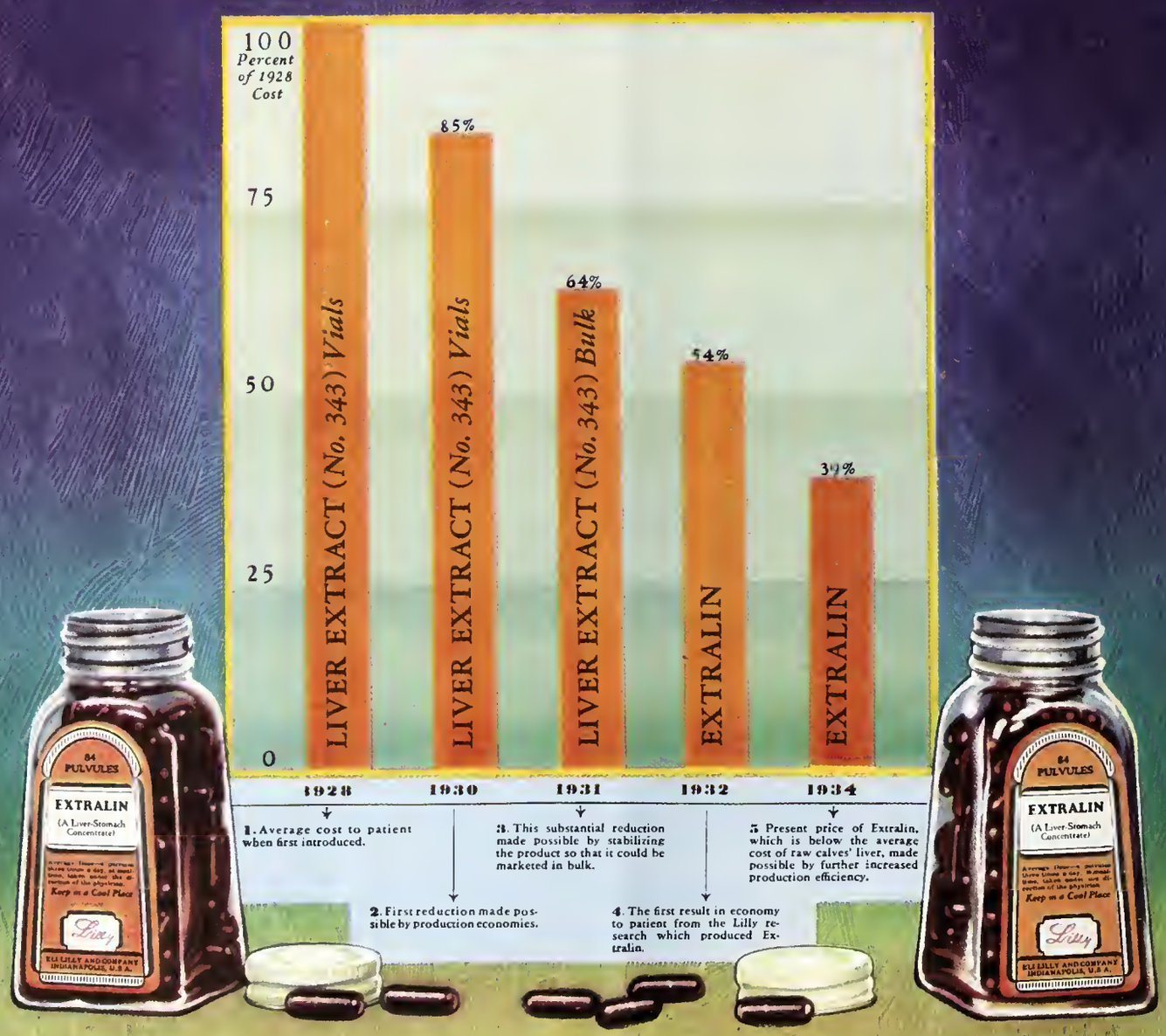

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BOOK REVIEWS

(Continued from Page 16)

the therapy of syphilis. Yet this subject is so large that it occupies a relatively large space in a large book. It is not so long ago that medical men frequently assumed a lofty scornful attitude toward drugs or therapeutic technique, and even yet in many works, on dermatology for instance, treatment is often dismissed with a left hand gesture, leaving one entirely in the dark in regard to the author's curative procedures. It must be said that, among diseases, syphilis is the one that has always demanded treatment, and down through the ages has acted as a mighty force stirring up the profession to ever renewed efforts to relieve the sufferer from his unsightly appearance or his inward griefs or, later, after finding the spirochete, with the more definite aim of freeing him from his unwelcome invader.

The first great shock the modern therapeutic nihilists had was the perfection of surgical therapy by Lister and his followers. Nihilists, however, are a pig-headed lot, whether in politics or medicine, and most of them had not the intelligence to perceive that surgical dressings were a department of therapy. Nevertheless, there was no denying that salvarsan was a medicine, and one of great therapeutic value in syphilis, although its introduction was at first by no means an easy matter. Stokes as a therapist is no nihilist, but gives you his own experience, and all the useful information either he or his trustworthy associates can gather.

There is still another feature of the modern treatment of syphilis. In the old days we had only the patient to treat and to think of. Now each case represents consideration of two individuals—the patient and the spirochete—and the habits and nature of the latter are often of great importance, and Stokes gives many a hint of its individuality.

At times it is highly important to demonstrate the spirochete in a given lesion, and Stokes has included detailed instructions for this delicate and time-consuming task. This work, however, requires such patience in searching and in technique, and such clear eyesight that it is especially a labor for a young enthusiastic medical student with whom, as Stokes wittily remarks, wearisomeness of the search is relieved by the glory of the find.

D. W. M.

TWENTY-FIVE YEARS AGO

(Contineud from Text Page 216)

medical schools, and particularly those of this western country. Not only is it important that men should have opportunities to become trained in tropical diseases in order that they may meet the health problems confronting the native and the white man who enters the tropics, but tropical diseases are fast becoming a serious menace to the white man in his own country. The Pacific Coast has not only frequent opportunity to see cases of acute and chronic tropical disease that have been imported into the United States, but several already exist endemically here, and unless properly handled by trained men, threaten danger not only to the communities in which they now exist, but to the United States in general.

The faculty of the Oakland College of Medicine has long felt the need of establishing a department of tropical medicine, which would offer to its students an adequate training in this important subject. The opportunity to satisfy this need has just been rendered possible through the generous monetary bequests to the college of a number of its friends. . . .

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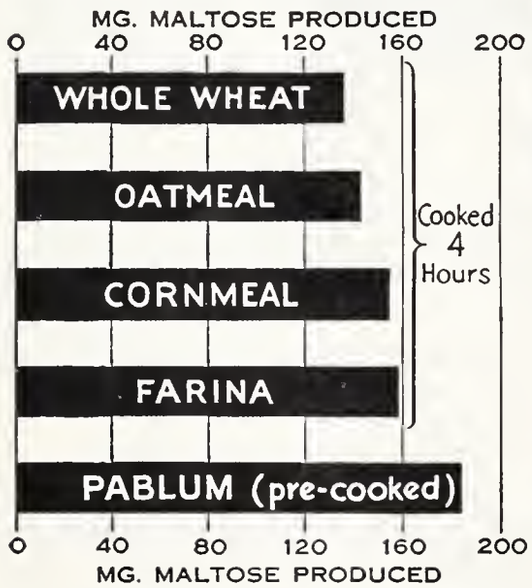
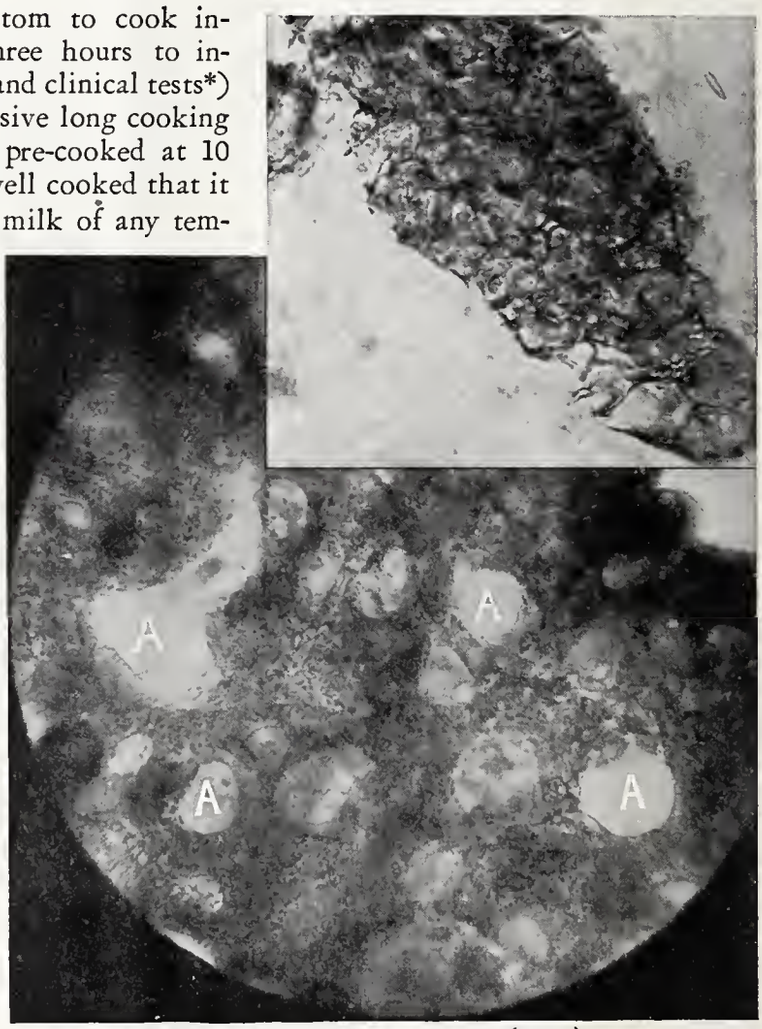


*Chart shows that maltose production is much greater for Pablum prepared with cold water than for other cereals cooked 4 hours. Ross and Burrill (Journal of Pediatrics, May 1934) conclude from this and from the total soluble carbohydrate formed that starch digestion of Pablum is more rapid than that of 6 other cereals.



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Large photomicrograph: Pablum mixed with cold water—portion of large flake. Pablum flakes are honeycombed with "pores" or air-spaces (note light areas A). This porosity permits ready absorption of digestive fluids by the entire flake. No starch granules are visible—they have been completely ruptured.

Inset: Farina cooked ½ hour—clump of cereal composed of unruptured starch granules. Note density of clump and lack of porosity. Many starch granules, such as are present in raw cereal, remain unchanged in form.

BESIDES being thoroughly cooked and readily digestible, Pablum supplies essential vitamins and minerals, especially vitamins A, B, E, and G, and calcium, phosphorus, iron, and copper. It is a palatable cereal consisting of wheatmeal, oatmeal, cornmeal, wheat embryo, alfalfa leaf, beef bone, brewers' yeast, and salt.

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(Continued from Text Page 216)

drugs for persons not suffering from incurable ailments." (*Southwest News Press,* Los Angeles, July 6. 1934.)

A new title was added to the already voluminous list of drugless practices, when in the Los Angeles *Times* of August 7, 1934, was mentioned "'Craniopathy,' a specialized branch of chiropractic, in which Dr. George A. Cole is engaged . . ." is said to give "definite promise in the relief of certain illnesses by direct manipulation of head bones." The article related that Chiropractor Cole claims cranial bones heretofore have been regarded as immovable; however, he has developed a method of successful manipulation of said bones, whereby may be obtained beneficial results in the treatment of certain head ailments. Anyone familiar with the anatomical construction of the skull will scoff at this claim.

In a recent Los Angeles Superior Court decision, an injunction which sought to prevent Miss Dagmar A. Nelson, a nurse, from administering anesthetics, was denied. Superior Judge Allen B. Campbell, sitting by assignment from Kern County, in denying said injunction, said: "Actions of the defendant under the evidence introduced in this case do not constitute the practice of medicine or surgery under the Medical Practice Act." (Los Angeles *Herald-Express,* August 1, 1934.)

"Simon F. Mohr, seventy-six, alleged to be a fake eye doctor, and who secured jewelry and other valuables from Mrs. Anna Manker of Anaheim in payment for his treatment, was sentenced to San Quentin yesterday by Superior Judge G. H. Scovell. . . . Mohr had been entangled with the law in New York over his eye treatments and has served at Sing Sing. . . ." (Anaheim *Bulletin,* July 28, 1934.) (Previous entries, December, 1931; May, 1934, adv. page 17; June, 1934, adv. page 18.)

"Continuing an investigation started last May, the Federal Grand Jury yesterday returned another indictment accusing Dr. E. H. Williams, Los Angeles physician and former head of the Los Angeles County Narcotic Clinic, of conspiring with Dr. E. H. Steele, his office associate, to violate the Harrison Narcotic Act, and of five overt acts of issuing narcotic prescrip-

(Continued on Next Page)

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(Continued from Preceding Page)

tions without making a physical examination of the patients. . . . The records on which the grand jury action against Drs. Williams and Steele was founded are located in two downtown drug stores and were turned over to federal investigators for grand jury use, officers said. They were said to reveal that approximately three hundred ounces of morphin were dispensed at the two stores on prescriptions assertedly signed by the two physicians." (Los Angeles *Times,* August 2, 1934.)

"Nicholas West, alias H. W. Davidson, known in San Francisco as a doctor, with offices in the Hobart Building, was arrested yesterday on a warrant issued from Scott's Bar, Siskiyou County, charging him with conspiracy to violate the Medical Practice Act. Davidson has been running an illegal 'tuberculosis cure' mail-order business, according to J. W. Davidson, investigator for the State Board of Medical Examiners, and assertedly was arrested once before on a similar charge. . . ." (San Francisco *Examiner,* August 11, 1934.) (Previous entry, April 1934, adv. page 21.)

William Fisher, said to have formerly operated a pool hall and from some of his customers obtained a formula for one of the multitude of escharotic cancer pastes, decided to attempt to practice medicine. After treating a cancer of the breast for several months, the pain suffered by his victim caused his attempt to be brought to the attention of the Board of Medical Examiners. The report indicates his medical (?) career was cut short when on August 2, in the Municipal Court of Los Angeles, he pleaded guilty to a charge of violation of the Medical Practice Act, applied for

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probation, was committed to jail and on August 9 sentenced to pay a fine of $600 or serve 180 days in the city jail. Defendant was committed to jail.

The records show that on July 2 A. J. Newman was found guilty in the Municipal Court of Los Angeles for violation of the Medical Practice Act and sentenced to pay a fine of $100 or serve fifty days in the city jail. The fine was paid. It is reported that this trial "was replete with references to Russia, Communism, freedom of everything from speech to practice of medicine, and was attended by a large gathering of Communists. Prior to the time of the trial, postcards were sent out by Newman inviting all to attend the trial. . . ."

The tax collector of the city and county of San Francisco recently notified the Board of Medical Examiners that, based upon a recent court decision, it is not legal under the new charter to charge an occupation tax for the privilege of practicing any of the professions in the city of San Francisco. This includes not only all licensed under the Medical Practice Act, but attorneys, architects, etc. This has no connection with the annual registration of $1 required under the Medical Practice Act.

Hotel Water Must Be Safe.—Spurred to action by the lessons of the amebic dysentery epidemic in Chicago last year, resulting in 850 known cases and fifty-two known deaths to May 15, 1934, due to faulty water and sewerage systems in two prominent hotels, the American Water Works Association has adopted and promulgated to its members the following resolution:

"That the hotel where an A. W. W. A. annual convention is to be held be required to submit a certified

(Continued on Next Page)

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(Continued from Preceding Page)

plan of their water supply and drain piping and a certificate from the State Board of Health in which state the city is situated that there are no dangerous insanitary conditions existing."

The American Society of Civil Engineers has adopted a resolution of similar import. These actions will preclude convention patronage by the organizations of any hotel in which there is any cross connection or a defect in the drainage system liable to cause siphoning of water from toilets or bath tubs into the water supply for drinking purposes. Other factors in sanitation equipment and sanitary management of hotels will receive careful attention.

An interesting factor in the Chicago outbreak was that there was sufficient residual chlorin in the water to eliminate the typhoid fever and enteritis hazards, but that the amebic dysentery organism was strongly resistant to chlorin and, therefore, passed into the water supply and caused the epidemic.—*Ohio Health News.*

Pseudo-Science or Taking Out the Piffle.—In these days when marvels more amazing than the Arabian Nights are commonplace, the layman who knows comparatively little of the inner workings of his radio or his automobile has come to look upon science as something that is infallible, according to Dr. Thurman B. Rice in a recent article. Doctor Rice, who is associate professor of bacteriology and public health in the Indiana University School of Medicine, has been a prolific writer on social hygiene, the venereal diseases and other phases of public health, and many of his articles have been excerpted for use in *Ohio Health News,* to the profit of its readers and the satisfaction of its editor. He has a rare but insidious sense of humor, which lightens what he has to say without levity and flavors it with a pungency which drives his points home without sting. The article (somewhat condensed), herein availed of, is out of his usual field, but runs true to form.

Reverting to the wonderer at the shrine of science, he points out that, "He turns some dials and gets music from the ends of the earth and sees nothing inconsistent in a diagnostic machine with similar dials that can tell him exactly what is the cause of the pain in his back. Knowing that a microscope is capable of many valuable uses in understanding the human body, he bites on an advertisement that shows a 'scientist' (God save the mark!) in a white coat with a setting of tubes, retorts and research microscopes that are

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fearfully and wonderfully made. Knowing that the x-rays can penetrate the body, he supposes that they make everything plain as day to the wizard who reads things knowable and unknowable in the darkened room, crowded with mysterious and awesome gadgets."

Wherefore the doctor exclaims, "What an opportunity all this makes for the shyster! And what a chance it is for the sophomore to pull a lot of big names before the homefolks!" So he holds that there are altogether too many persons who find in such a situation an opportunity to go highbrow and mouth a lot of "bunk" of which they have no real understanding. It is easy to go to any scientific laboratory, he says, read an article or two, and burst forth in polysyllabic nonsense. A parrot or a phonograph can be made to do the same thing, and will do it better, but it "takes study, brains and real understanding to use the information or to put it into such form that it can be understood by those who have something else to do" besides dabble in the margins of scientific truth.

There are some choice illustrations of his point, which can be used only in part. One was of a learned professor who stood before an audience of eight hundred women and told them it was exceedingly important that their children should get a little copper in their food daily, lest they suffer from anemia—which was beside the point, because the children will get the copper anyway. Doctor Rice commented that "It is doubtful if fifteen chemists could devise means so they wouldn't get the copper," if given a typical American ration.

A really noted authority on diet summed up a highly technical lecture on diet by telling his audience that all the essential ingredients are abundantly present in the usual diet except three—lime, iodin, and vitamin D—but did not point out that lime is "abundantly present" in many of the most common articles of food that one can hardly buy any except iodized salt, and that sunlight will provide all the necessary vitamin D, even if there were no fish-oil preparations, radiated foods, butter, eggs, and bathroom lights of various kinds.

One would suppose that white bread is positively poisonous, if he were to listen to the self-styled authorities on the subject; yet white bread has been the accepted bread of the American people almost from the beginning. Recently it was found that green peppers are rich in certain vitamins, and a school has arisen that advocates their regular inclusion in the diet; yet green peppers have a strong flavor which many persons do not like and of which one quickly tires. The same vitamins can be found in abundance elsewhere, so why limit this phase of the diet to peppers?

"All nonsense," says the doctor, who adds: "How many silly health rules have been thrown at us in the

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name of science!" He lists, not to drink water at meal times; not to sleep on the left side; not to eat bananas, beans, potatoes, corn products, glucose, meat, salt, spices, candy, uncooked food, white bread, fruits with small seeds, canned foods, preserved foods; not to drink coffee and tea, and that milk and cheese are very constipating. "It is time," he says, "that we are getting to *sense* in these scientific matters. It is a fact that science and sense are essentially the same. In our experience, genuine science has always made sense, and good common sense has been based on principles which are scientifically correct." In consideration whereof Doctor Rice concludes: "There is nothing so inaccurate as overaccuracy, and naught so unscientific as scientific piffle."—*Ohio Health News.*

Safeguards.—Under the above title, the Wilmington, California, *Press* published the following editorial recently:

"The average citizen is ignorant of the elaborate precautions taken by the public health service to protect him from communicable diseases both at home and while traveling. It is commonly known that quarantines are maintained and water sources treated, but beyond that the citizenry knows little of the work of local, state, and federal health agencies.

"Careful guard is kept to protect the health of travelers and to control the spread of disease from one community to another and from one state to another. This requires organization and care. Railroad and steamship companies would be unable to afford the health protection, which they desire that their patrons should enjoy, unless they received the coöperation and expert knowledge of the public health service.

"Common carriers operate under strict regulations for sanitary reasons. Their water supply is tested frequently. Foodstuffs sold in their dining rooms and cars are inspected and the men and women who handle that food must submit to medical examinations. The quarantines enforced on all steamships in international transit are well known, but it is not so well known that railroad yards in which passenger coaches are cleaned and replenished are under strict sanitary supervision. These facts help to explain why communicable disease is seldom carried from one community to another by the traveling public."

Milk-Borne Epidemics, 1933.—One of the especially interesting subjects that came before the Conference of State and Provincial Health Authorities at Washington, early in June, was "Milk-Borne Epidemic Diseases in the United States and Canada," presented by Dr. S. J. Crumbine of the American Child Health Association, field secretary of the Conference, in an elaborate report. There was full representation of all the states and provinces, enabling a complete and comprehensive report, with the subject sketched in great detail and from many angles.

It is intended here to present only a summary of epidemics in the United States, and conclusions reached by the Conference; but as a background for full appreciation, it is interesting to note that 45 per cent of the communities involved in epidemics were rural communities or towns having population of less than 2,500; 11 per cent were towns of 2,500 to 5,000; 21 per cent were cities of 5,000 to 10,000; 9 per cent were cities of 10,000 to 25,000; and that 10 per cent were cities of 25,000 to 50,000. Thus, it is seen that 77 per cent of the communities involved were rural communities or cities of less than 1,000 population, which is in keeping with the trend during the last several years. Following is a summary of epidemics in the United States during 1933:

(Continued on Page 29)

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Dr. Hans Guggisberg, Prof. Gynecology, University of Berne, Berne, Switz.
Dr. Paul Strassmann, Prof. of Obstetrics and Gynecology, University of Berlin, Berlin, Germany.

TENTATIVE:

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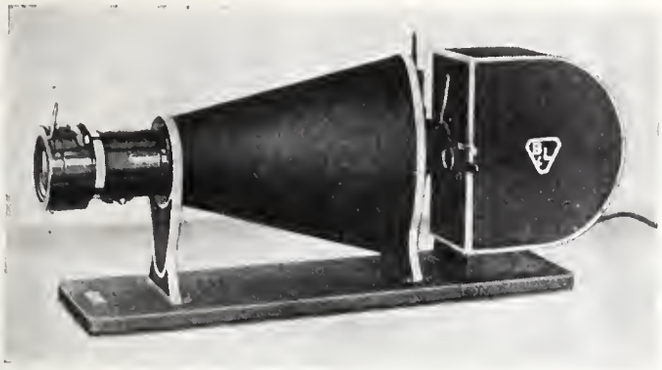

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(Continued from Page 26)

1. Forty-five milk-borne epidemics, involving 1,424 cases and thirty-eight deaths, were reported to have occurred in the United States during 1933.

2. All epidemics were caused by raw products.

3. Typhoid fever was responsible for 51 per cent of the epidemics, 22 per cent of the cases and 63 per cent of the deaths. Three diseases combined—typhoid, septic sore throat, and scarlet fever—were responsible for 76 per cent of the epidemics, 75 per cent of the cases and 87 per cent of the deaths.

4. "Carriers" and "cases on dairies" were reported to have been the sources through which milk was infected in 72 per cent of the epidemics.

5. June, July, August and September, the four warmest months, contained 51 per cent of the epidemics.

6. Rural communities and cities of less than 10,000 population accounted for 77 per cent of the fifty-three communities involved in the epidemics.

Conclusions. — With these annually recurring epidemics, together with the large number of known and unknown cases of undulant fever and bovine tuberculosis, it would seem that as a Conference of Health Officials we ought soon to determine definitely to take some effective action to put an end to this distressing loss of life and serious economic loss. The situation is not hopeless, nor is the method of dealing with it in doubt, for authorities are all agreed that efficient pasteurization will protect the consumer of milk from these milk-borne diseases. It is true that there are many state and local obstacles in the way of securing pasteurization of all milk except certified milk; but the benefits in the protection of life and health would be so immediate and so certain that further temporizing with the problem seems to be no longer justified.

On completing its consideration of the report, the Conference adopted the following:

"Resolved, That it is the sense of this Conference that all milk intended for human consumption should be effectively pasteurized."—*Ohio Health News.*

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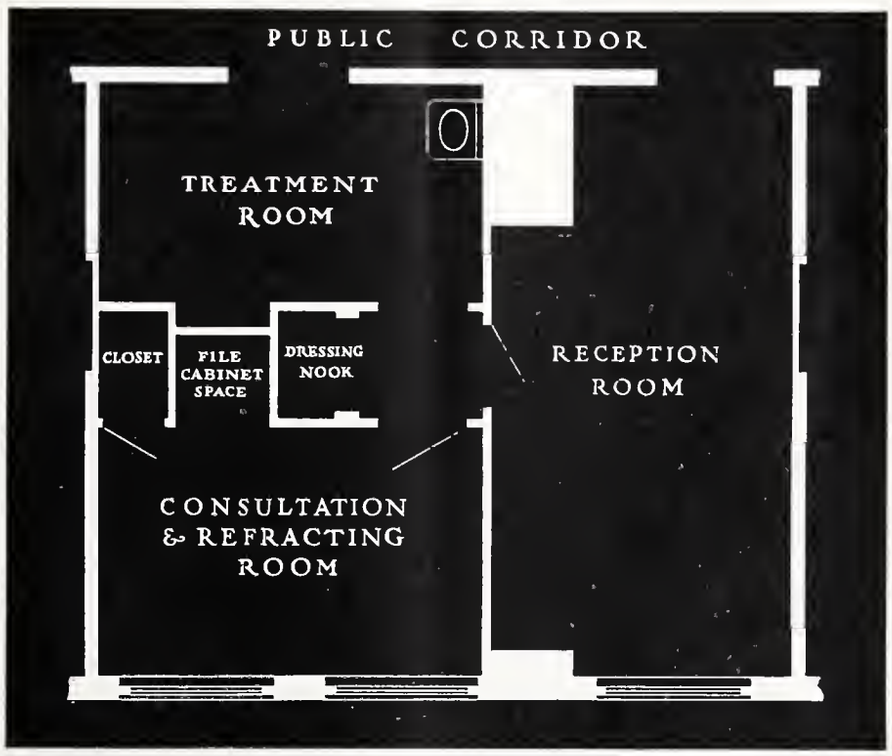

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CALIFORNIA AND WESTERN MEDICINE

Owned and Published Monthly by the California Medical Association
Four Fifty Sutter, Room 2004, San Francisco
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

Vol. 41 SEPTEMBER, 1934 No. 3

HYPERTENSION—THE RÔLE OF INFECTIONS THEREIN*

By John T. King, Jr.
Baltimore, Maryland

I

As more is learned of the various etiologic backgrounds of hypertension, it has become clear that several broad differentiations can be made. It seems safe to say that most cases of abnormal elevation of arterial pressure are associated with obesity, with stenosis of the isthmus (coarctation) of the aorta, and with vascular or renal disease. Rare instances of paroxysmal hypertension are to be found associated with tumors of the adrenal gland; every clinician is familiar with the transient hypertension of the nervous patient; moreover, hypertension associated with the menopause may subside subsequently. With few exceptions, however, permanent hypertension can be linked to one of the three broad etiologic bases mentioned above.

OBESITY AND BLOOD PRESSURE

An important contribution bearing on the influence of obesity alone upon blood pressure is that of Dunham.[4] In his study, analysis was made of the pressure findings of army officers from more than 12,000 reports. Comparisons were made between men of similar age groups whose body weights were normal, and those who were obese. As the men concerned in the study were all in similar environments and of similar habits of work, diet and exercise, it seems safe to assume that the average blood pressure of the obese group is characteristic of the state of obesity and of no other factor. It was shown that obesity is associated with a slight to moderate hypertension, and that, in a rough way, the greater the obesity, the higher the pressure. Even among the most obese officers (those who were forty or more pounds overweight), however, the maximum pressure should not exceed 150/96 for the larger proportion of cases. Thus, while obesity alone may be expected to cause a slight to moderate elevation of arterial pressure, it is well to look for other factors in cases of excessive hypertension.

COARCTATION OF THE AORTA

Isthmus stenosis, or coarctation, of the aorta usually causes hypertension in the arms, hypotension in the legs. In some manner the arterial pulse is largely or completely lost, in this condition, by the time the blood has passed through devious collateral vessels and reached the legs. In the arms, however, whose arterial blood is derived from the aorta proximal to the stenosis, there is usually, though not invariably, a hypertension. Isthmus stenosis has been shown by Fawcett [8] and by Evans [6] to be present in about one of every 1,000 individuals examined at necropsy. Hence it is by no means a negligible factor in any statistical study of hypertension.

HYPERTENSION DUE TO VASCULAR OR RENAL DISEASE

The majority of instances of hypertension fall into the third category—listed above as those due to vascular or renal disease. I am considering these together. Hypertension of renal origin occurs in acute or chronic glomerulonephritis, in polycystic renal degeneration, and may be found in the grossly damaged kidneys of pyelonephritis (Longcope and Winkenwerder).[16] Recently Goldblatt, Lynch, Hanzal and Summerville [10] have been able to induce a persistent hypertension in dogs by placing clamps around the renal arteries. It is now generally believed that arterial hypertension, which begins as the so-called essential hypertension, is due to sclerosis of the arterioles, especially to be found in the splanchnic area. Evans [5] describes "diffuse hyperplastic sclerosis" as occurring more commonly in the kidneys than in any other organ, and finds that it is not present in other organs unless it is present in kidneys or spleen; moreover, he finds a higher grade of sclerosis in the kidneys than elsewhere. He concludes, in a very interesting deduction, that essential hypertension constitutes a precocious senility, inasmuch as renal changes similar to those found in essential hypertension are frequently present as

* From the Medical Clinic, School of Medicine, The Johns Hopkins University; being part of the Stanley P. Black Memorial Lecture delivered at Pasadena, April 9, 1934.

a physiologic result of advancing years. Jaffe,[12] after studying five very early instances of hypertension at necropsy, concludes that an initial dilatation of the renal afferent arterioles precedes the sclerosis which is so characteristic. The pathologic observations of Lee,[14] Fishberg[9] and Hasenfeld[11] are in essential agreement with those quoted above. Hence it appears that vascular sclerosis of the kidneys is the characteristic lesion of essential hypertension, while hypertension may also be produced by other factors which disturb the renal circulation or function, such as acute or chronic glomerulonephritis, polycystic disease, pyelonephritis and experimental interference with kidney circulation or function. Isthmus stenosis of the aorta is the outstanding extrarenal basis of hypertension.

THE BASIS OF ESSENTIAL HYPERTENSION

Thus it is generally accepted as a fact that the mechanical obstruction offered to the circulation by arteriolar thickening is the basis of essential hypertension. There is ample evidence that such sclerosis is most regularly found in the kidneys: series of necropsies in cases of hypertension have shown this lesion to be present in every case (Fishberg,[9] Jaffe[12]). Klotz[14] fails to find evidence that arteriosclerosis of the kidneys is a precursor of, or an essential factor in, the production of chronic nephritis. Rather, he finds that small vessel (arteriolar) disease in the renal parenchyma makes its appearance *concurrently* with lesions appearing in the glomeruli and intertubular stroma. Going further, Jaffe[12] suggests that the initial lesion in essential hypertension may be a dilatation of the afferent arterioles, secondary to glomerular disorder, possibly spasm of the glomeruli due to irritation by a noxious substance.

In any case—that is, whether arteriolar disease exerts a selective action on the renal afferent arterioles leading to a vascular nephritis, whether it occurs as a part of a general renal damage, or whether it is secondary to some disorder of glomerular function—it seems reasonable to assume that such a lesion may be set up by some agent similar to that which causes glomerulonephritis.

The relation of infections to glomerulonephritis is so well known as to require no comment. In this report, an attempt is being made to determine whether or not there exists any clinical relation between throat infections and essential hypertension. To illustrate what I have in mind, let me call attention to the last ten patients with hypertension that have come either to my office or to the ward on which I have been visiting at the Johns Hopkins Hospital.

REPORT OF CASES

Case 1.—An unmarried white woman, aged 38. Blood pressure, 208/126. There was a trace of albumin without casts in the urine. Though she recalled little of her childhood diseases, an older sister reported that the patient had been the member of the family most often affected by sore throats, frequently spending up to a week in bed with such an attack. A laryngologist found chronic tonsillitis. Wassermann: negative.

Case 2.—A widow in her late fifties. Blood pressure, 190/100. The tonsils were heavily scarred, and a laryngologist diagnosed definite chronic tonsillitis. At the time she was seen, patient was being treated for bilateral acute otitis media. The urine was negative. Wasserman: not done, but nothing suggested lues.

Case 3.—A widow of 44, white, gave no history of sore throat or tonsillitis. Had seen a laryngologist two years before and had nothing done. Blood pressure was 196/110. Urine, clear. Wasserman, negative. Diagnosis: Moderate obesity: hypertension; aneurism of the internal carotid artery. The tonsils were definitely scarred, and both contained inclusions, apparently pus. This patient subsequently lost from 209 to 184 pounds in weight and the blood pressure fell to 142/84; as she is still obese, such a pressure can be considered of no importance.

Case 4.—A married woman of 42. Blood pressure, 172/70. Frequent tonsillitis and bronchitis as child, and tonsillitis up to T. and A. at age of 39. Occasional sore throat since. Throat within normal limits when seen. The urine had an occasional trace of albumin.

Case 5.—A white man of 43. Had had extremely sore throats once or twice every year. No definite tonsillitis; not confined to bed. When seen, was suffering from cardiac complications of hypertension. Blood pressure, 200/120. Urine quite clear. Laryngological report: Badly infected tonsils, also chronic catarrhal otitis media. Wassermann negative.

Case 6.—A 46-year-old negress. Wassermann positive. Admitted for heart failure, with blood pressure 284/140. There was a history of repeated sore throat in childhood. Tonsils large, engorged, scarred and adherent, obviously seat of old trouble. Urine: Albumin S. P. T. Casts: 0.

Case 7.—A 25-year-old negress, history of syphilis treated. Admitted with blood pressure 220/140. History of frequent sore throats and colds. Tonsils small, scarred. At times tender glands at angles of jaw. Urine: Albumin 3 +. Casts: 0. Outcome: Death from uremia and cardiac complications. Autopsy: Scarred kidneys, presenting a granular surface. One contains cysts. Cortex of each much atrophied, measuring 3 millimeters in width. Picture is that of progressive arteriolar vascular disease, with involvement of the glomeruli, increase in interstitial tissue and some change in the tubules.

Case 8.—A 39-year-old negress. Admitted with blood pressure 250/140. Occasional sore throats. Tonsils not injected, but scarred. One large white inclusion in the right. Urine: Albumin 3+. Few casts. Wassermann, negative. Outcome: Death. Autopsy. Finely scarred kidney surfaces. Slight narrowing of the cortex. Chronic arteriolar nephritis, with thickening of the small vessels and glomerular changes. Few small hemorrhages.

Case 9.—A 38-year-old negress. Admitted with blood pressure 240/135. Gave a history of two attacks of rheumatic fever. Many sore throats. Admitted with rheumatic fever and signs of mitral stenosis. Wassermann negative. Tonsils small, injected. Enlarged glands at angles of jaw. Urine: Albumin 2+. Casts: 0.

Case 10.—A 46-year-old negress. Admitted for hemoptysis. Blood pressure, 226/130. History of repeated attacks of tonsillitis. Wassermann reaction, positive. Tonsils small, not inflamed. Enlarged glands at angles of jaw. Urine negative.

COMMENT

Such a tiny group is, of course, insignificant; I quote them because they represent to me just the state of affairs that I see constantly—that is, if reasonable care is taken to investigate the throat and its history. What have they in common? All are adults, but only one is over 50 years of age, hence they are to be classed as instances of premature, rather than normal or senile, hypertension. Two could be classed as instances of nephritis, or nephropathy, and autopsy showed that the pathologic lesion was a diffuse thickening of the renal arterioles with other changes dependent thereupon. Three had history of syphilis, or a positive Wassermann reaction; these were negresses in hospital—a group in which syphilis is very prevalent. Nine of the ten gave clear history or presented evidence of tonsillar infection, doubtful in one. In this patient (Case 3) the pressure is now within normal limits.

THROAT INFECTIONS IN THE ETIOLOGY OF HYPERTENSION

Many (Faught,[7] Sprunt,[18] Barach,[1] and especially Bowers[3]) have suggested the possible importance of throat infections in the etiology of hypertension. There is no evidence that syphilis causes arteriolar disease. Thayer[19, 20] has shown that typhoid fever causes a slight, but definite, permanent elevation of the average blood pressure in individuals who have recovered from the disease. Ophüls[17] considered sepsis in a broad sense very important in the etiology. There is now ample evidence that patients who have been affected by rheumatic fever are particularly liable to premature hypertension. Boas and Fineberg[2] found hypertension in 55 per cent of patients with mitral stenosis who were more than 40 years of age; Levine and Fulton[15] found 58 per cent of their mitral stenosis patients with hypertension after 45 years of age. The last mentioned authors consider the theory that the valvular lesion, and the hypertension, may be due to a common etiology, namely, an infection, but discard this concept in favor of some "inherited vulnerability" on the part of the patient to infection, and to degenerative vascular disease. Boas and Fineberg[2] suggest various theories, but conclude that a satisfactory explanation has not yet been found. It will be shown that throat infections are common precursors of hypertension, as they are of rheumatic disease, either with or without valvular disease. A demonstration that hypertension results from throat infections might throw light on the etiology of the hypertension of mitral stenosis.

For the first study, 200 cases of hypertension were analyzed for throat infections. For the purpose of obtaining different strata of society, 100 cases were taken from my office files and 100 from the records of the Johns Hopkins Hospital. In the first group a systolic pressure of 140 millimeters or more was taken as indication of hypertension. Thinking that this standard might be too inclusive, the second 100 cases were taken from patients with pressure in excess of 150 millimeters of mercury. In selecting case records from the Johns Hopkins Hospital, only those from the medical service were used; surgical cases might be of great value, especially as controls, but the history of throat infection and the examination of the throat are gone into more exhaustively on the medical service, and, in our judgment, these considerations made it desirable to use only such cases for statistical purposes, in addition to my private records.

In each case an attempt was made to ascertain from the history whether the patient had had an excessive number of severe "sore throats," attacks of tonsillitis or quinsy or "sore throats" of unusual severity; if so, the history was considered positive. A usual number of "sore throats," such as might be incident to common colds, was considered of no significance.

History of tonsillectomy is considered important evidence of tonsil infection. In spite of the widespread resort to this operation in some communities, its application is still restricted in the vicinity of Baltimore to cases of demonstrable infection. In a few cases tonsillectomy had been performed in other localities. I know of no instance in which tonsillectomy has been done, "on general principles," because of essential hypertension. It is perhaps true that search for infections is particularly thorough in cases of unexplained hypertension; on the other hand, it is safe to say that the number of normal tonsils removed for hypertension is negligible, and that such a procedure is never done with intent.

Signs of chronic infection in the tonsils are generally considered in Baltimore to consist of demonstrable retention of pus, excessive scarring or glazing, excessive adhesions and, at least in

TABLE 1.—*Hypertension, Two Hundred Cases*

	Blood Pressure Over 140 100 Cases No.	Per Cent		Blood Pressure Over 150 100 Cases No.	Per Cent
Positive history	37	37.0	Positive history	54	54.0
T. and A.	19	19.0	T. and A.	19	19.0
Present infection	13	13.0	Present infection	9	9.0
Rheumatic fever and rheumatic heart disease	11	11.0	Rheumatic fever and rheumatic heart disease	10	10.0
Entirely normal	42	42.0	Entirely normal	30	30.0

adults, enlarged "tonsillar" glands at the angles of the jaw. Permanent or transient tenderness of these glands is also an important sign of infection of the tonsils. It is probable that errors in judgment concerning either the history or the present condition of the tonsils have entered into our analyses. However, the same methods and the same criteria were employed in drawing data from the group of hypertensive patients as from the groups of "control" cases.† In view of the close relations between tonsillitis and rheumatic fever, record was also made of the cases in which a history of past rheumatic fever was obtained.

It should be pointed out that the condition of the tonsils was studied for this report merely because the tonsils are accessible to examination. It would be desirable to include in such an analysis the condition of the paranasal sinuses and nasopharynx, but suitable notes on the sinuses are lacking in most of the routine examinations.

The summary of the history and examination as regards the tonsils is shown in Table 1. The first column is drawn from private office patients, the second from the records of the Johns Hopkins Hospital; some of the second group are taken from private patients, most are from ward or dispensary patients. It is clear that the incidence of positive histories is higher in the hospital group; I do not know how to explain this discrepancy, though it is likely that the selection of 140 millimeters or more as ground for the diagnosis of hypertension was too low, especially as no consideration is made of the age. On the whole, the second column is perhaps the more significant.

(To be continued)

CANCER OF THE STOMACH*

By JOHN HOMER WOOLSEY, M. D.
Woodland

DISCUSSION *by Ernst Gehrels, M. D., San Francisco; Thomas O. Burger, M. D., San Diego; John Hunt Shephard, M. D., San Jose.*

CANCER of the stomach may be an old and threadbare subject to many, but when we realize that this lesion causes approximately thirty-five thousand deaths annually in the United States alone, it is evident that it merits considerable attention. The only known cure for cancer of the stomach is early operation; when we find that the average patient is treated relatively late in the course of his disease, it is obvious that serious and constructive thought is essential.

ANALYSIS OF ONE HUNDRED CASES

An analysis of one hundred cases, the majority of which were cared for by the author, has been made and deductions drawn which, it is believed, if followed, will lead to advancement in the recognition of the condition and, thereby, improvement in the final results of treatment.

TABLE 1.—*Sex Incidence*

Sex	*Cases*
Male	81
Female	19

The incidence of cancer of the stomach predominates in males (Table 1), and follows the statistics of other series in almost exact ratio. It is, in fact, very close to the incidence of that other common gastroduodenal lesion, peptic ulcer, which occurs in males in 75 per cent of instances.

TABLE 2.—*Age Incidence*

Age in Decades	*Cases*
20-29	1
30-39	7
40-49	26
50-59	24
60-69	35
70-76	7

The age predominance is in the fourth, fifth, and sixth decades (Table 2); but, as in other forms of cancer, we now must designate the cancer age as beginning at the age of thirty-five rather than at forty. It is of interest to note that in this series there were three, one male and two females, aged thirty-four years; one male, aged thirty-seven; two, one male and one female, aged thirty-eight; one male, aged thirty-nine; and one young woman, aged twenty-one, who had a large adenocarcinoma. The latter gave a family history of "stomach trouble," a complaint present for eleven months, during the last nine of which she was treated by a physician as for an ulcer, without x-ray investigation.

TABLE 3.—*Duration of Symptoms Before Admission to Hospital*

Months	*Cases*	*Months*	*Cases*
1	2	9	3
2	5	10	7
3	13	11	2
4	7	12	14
5	2	13	1
6	2	18	7
7	5	24	10
8	4	36	4

Carcinoma of the stomach varies, as to the rapidity of its growth, with the type and degree of malignancy. Three months may mean operability.

TABLE 4.—*The Interval Between Consulting a Physician and the Operative Treatment*

Months	*Cases*	*Months*	*Cases*
3	6	10	2
4	0	11	0
5	1	12	1
6	2	18	3
7	1	24	2
8	1	36	2
9	1	48	1

† In order to avoid the psychologic hazard of interpreting case histories, the author had Miss Mary Stoll draw the data from the histories; she was not informed as to the thesis that was under examination. In several doubtful cases, the author helped with as nearly unbiased advice as possible.

* From the Department of Surgery, University of California Medical School.

* Read before the General Surgery Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24 to 27, 1933.

TABLE 5.—*Reasons for Delay in Instigation of Proper Treatment by Physician*

Reasons	*Cases*	*Duration of Treatment (Months)*													
		2	3	5	6	7	8	9	10	12	13	18	24	36	48
Indigestion—Diet	19	..	5	1	1	1	1	..	2	1	..	2	2	2	1
Ulcer—Diet	3	..	..	..	..	1	1	1	..	..	..	..	..	..	..
Pernicious anemia	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Lead poisoning	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Syphilis	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Misled by x-ray examination	4	..	1	1	..	..	..	..	..	..	1	..	1	..	..
Refused operation	3	..	..	..	..	..	..	..	1	1	..	1	..	..	..
Advised "no help"	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..

PATIENTS DELAY IN SEEKING TREATMENT

The patient tends to delay seeking proper treatment (Table 3) for many reasons. Exclusive of the delay caused by the advice of the attending physician, some of these motives are: the gullibility of the patient in trying flamboyantly advertised patent medicines, assisted by the willingness of many pharmacists to deal them out to him, and even to suggest certain advertised "remedies" which apparently fit the patient's complaints; the advice of the "displaced vertebra," the "herbivorous," or the "absent treatment" cults, respectively; the patient's attempt to belittle his symptoms, which are so often variable, and even apparently insignificant in the early stages.

Alvarez,[1] in a review of forty-one cases of cancer of the stomach in physicians, found twenty patients who delayed for twelve months, and eight who delayed for five months or less. If physicians themselves are not sufficiently astute to suspect a serious derangement of their stomachs, we should not accuse the layman of undue stupidity. Serious consideration must be given to this aspect of the course of cancer if we are to show improvement in dealing with this problem.

The data presented in Table 4 are from those case records in which definite information was given (twenty-three cases). In my opinion, the same ratio probably would result in three-fourths of the unrecorded cases also, if the information could be obtained. If so, this is a reflection upon the medical profession, for this period, so aptly named by Reimann[2] as the period of "avoidable delay," can be shortened markedly. A consideration of the reasons for delay, and for the conduct of a case of "indigestion" in a person of thirty-five years of age or older, will, it is believed, help us to shorten and often to eliminate this "avoidable delay."

Only cases in which safe deductions from recorded facts are possible are illustrated in Table 5 (thirty-three cases). It is to be noted that 22 per cent of patients in the series have been treated over a period of three months or more as having a benign lesion. Alvarez, in his analysis of forty-one physicians, found the question of ulcer intruding itself in twenty-one instances. Saltzstein and Sandweiss[3] of Detroit, found that one-third of 365 cases gave a fairly typical clinical history of peptic ulcer. All patients in the series diagnosed as having "indigestion," ulcer, pernicious anemia, or lead colic, were treated previous to coming under our care solely upon the evidence presented by the clinical history, physical examination, and the more common clinical laboratory aids. Not one was subjected to x-ray investigation, nor was a safe therapeutic test carried out to prove the diagnosis. Such lack of thorough investigation and conduct leads to an erroneous diagnosis. In addition, we should not consider a gastric lesion in the same manner as we do a duodenal lesion. The term "peptic ulcer," as applied to gastric and duodenal ulcer, is quite proper, but it does lead to mistakes in diagnosis and therapy. In gastric disturbances we must distinguish between the benign and the malignant lesion, but in the duodenal lesions there is less than .003 per cent incidence of malignancy. Therefore, because of the imminence of cancer in the stomach, I propose that we consider all gastric lesions as lesions potentially malignant, and put the burden of proof upon the x-ray evidence of change for the better and upon the therapeutic test.

A therapeutic test, as laid down by many and established in my own experience, should be a three weeks' course on a rigidly conducted regimen of diet and adequate rest. If the lesion is inflammatory, this will give absolute comfort. If this does not result, surgical exploration should be advised so that adequate treatment may be given. In this manner we shall eliminate such errors as "avoidable delay," illustrated in Table 5. Urban Maes[4] of New Orleans has said, in the relation of the profession to the recognition and treatment of cancer of the stomach: "We err, not because we do not know, but because we do not think." A proper consideration of the subject and the procedure will help us, therefore, to think, and to think safely.

IMPORTANCE OF CLINICAL HISTORY

Table 6 records no definite chain of symptoms indicative of cancer of the stomach, for there is no such typical history. Nevertheless, as in all gastro-intestinal complaints, the clinical history, even if indefinite, is of first importance. The history of a familial weakness, a "locus minoris resistentiæ," of the digestive tract is of some significance. If a patient of thirty-five years or more has any disturbance in motor function, or in digestive function, whether it be of a gradual or acute

TABLE 6.—*History*

Symptom	*Incidence*	*Symptom*	*Incidence*
Pain	57	Eructation	12
Vomiting	64	Constipation	20
Loss of weight	70	Diarrhea	5
Loss of strength	44	Tarry stools	10
Anorexia	11	Dysphagia	2
Flatulence	4	Hematemesis	8
Heavy, distressed feeling	7		

onset, or of a continuous or recurrent nature, the attending physician should be on his guard. In the majority of instances, the first noticeable symptom is described as varying, from a sense of heaviness and distress in the epigastric region, to dull, heavy, non-radiating epigastric pain, either steady or recurrent. This sense of distress, or pain, usually is worse immediately after taking food, but this is not always the case. In some patients there has been a loss of appetite, frequently associated with a low or absent hydrochloric acid content in the gastric juice. There may be interference with the progress of the food, either from direct obstruction or indirectly by inhibition of the progress of peristalsis; this leads to eructation and vomiting. In fact, the latter symptom brought to operation the most favorable cases in this series. Such symptoms as loss of weight, loss of strength,

TABLE 7.—*Physical Examination*

Signs	*Incidence*
Emaciation	74
Palpable mass	60
Peristalsis	8
Anemia	8

anorexia, and hematemesis, belong almost entirely to the terminal stage. We must, therefore, focus our attention upon the slightest change in motor or digestive function, and by some means carry the investigation to a definite conclusion.

In the early stages of cancer of the stomach—as in inflammatory lesions of the upper gastro-intestinal tract—the physical examination is of no direct value. The data in Table 7 are all signs of the "too late" stage; and while they, especially a palpable mass, do not signify absolute inoperability, they are synonymous with the late stages of cancer of the stomach.

AIDS TO DIAGNOSIS

The data recorded in Table 8 show three interesting aids to diagnosis. The examination of the stool for occult blood has shown this test to be of great importance where there is likelihood of an open lesion in the gastro-intestinal tract. In two

TABLE 8.—*Laboratory Aids*

Test	*Cases Examined*	*Positive*	*Negative*	*Achylia*	*Low Hcl.*	*Normal Hcl.*
Occult blood in stool	57	48	9	....	..	..
X-ray examination	85	81	4	....	..	..
Ewald test	56	....	..	42	7	7

TABLE 9.—*Blood Examination*

Hemoglobin per cent	*Cases*	*Blood Count* millions	*Cases*
30-39	6	2 -2½	4
40-49	7	2½-3	9
50-59	6	3 -3½	11
60-69	21	3½-4	18
70-79	24	4 -4½	25
80-89	19	4½-5	21
90-100	10	5+	8

cases the finding of occult blood by routine examination of the stool led to investigation by the x-ray, and the demonstration of the presence of cancer high up in the lesser curvature, the "silent area" of the stomach.

The examination by test-meal is also of suggestive value. Achylia, especially if it does not respond to histamin stimulation, is of significance. It may be, as some believe, a forerunner of malignant change and a warning signal, or it may mean the presence of a depleting phenomenon in contrast to the stimulating phenomenon seen with the irritable inflammatory lesion.

One could, therefore, secure a clinical history, if he were so situated as not to have available proper and exact means of diagnosis, examine the stool for occult blood (obtained, of course, with due precaution regarding ingestion of blood-bearing food), do a test-meal for the presence or absence of hydrochloric acid, and carry out a therapeutic test of three weeks with greater accuracy of diagnosis than is demonstrated in the conduct of the early care of the patients in this series.

TABLE 10.—*Relation of Ulcer to Carcinoma*

History	*Cases*
Positive	16
Possible	2
None	82

The advent of the x-ray, with its refined methods of observation, has led to the most accurate information available. It is a dangerous means of diagnosis, however, in the hands of the inexperienced, and in such instances has led, chiefly by the interpretation of x-ray plates only, to mistaken diagnosis, and, in turn, incorrect treatment. Not only the size and location of the defect are of importance, but the interference with the peristaltic wave is of significance. The mobility of the stomach to the palpating hand also gives information as to possible resectability. The accuracy in diagnosis by means of these tests, as recorded

TABLE 11.—*Operability*

	Exploration	*Palliation*	*Resection*
	23	....	....
Gastrojejunostomy	....	44	..
Billroth I	....	....	1
Billroth II	....	....	2
Mayo-Polya	....	....	17
Gastrostomy	....	6	....
Jejunostomy	....	4	....
Total	23	54	20=97

in Table 8, shows their value. We must not consider, therefore, that a person thirty-five years of age or older, with a complaint of indigestion, is completely and properly investigated without examination by x-ray in the hands of a competent roentgenologist.

The blood examination (Table 9) is of interest, not as a diagnostic point, but in treatment, for the low hemoglobin and low red cell count are not necessarily associated with the late inoperable lesion. The mortality in the surgical treatment of cancer of the stomach frequently results from the poor nutritional state of the patient. With proper preparation before operation, the mortality today is approximately one-fourth that of eighteen years ago, and blood transfusion has played a considerable part in this advance. From this standpoint, therefore, attention to the blood picture is important.

RELATION TO GASTRIC ULCER

In giving the incidence of a clinical history of gastric ulcer preceding proved malignancy, authors vary from 4 to 60 per cent. In this series (Table 10), there were sixteen patients with a positive history, and two with a suggestive history, or a total of 18 per cent. Saltzstein and Sandweiss estimated that one-third of their patients gave such a history, and Alvarez found, in the forty-one physicians, an incidence of 51 per cent. This does not signify that cancer arises from ulcer, but demonstrates that such a history cannot insure the diagnosis of a benign lesion, and emphasizes the need of considering a gastric lesion undetermined in nature until proved by the therapeutic test and by x-ray examination.

FORMS OF SURGICAL TREATMENT

Surgery, the only treatment with hope for cancer of the stomach, resolves itself into three forms: exploration, palliation, and resection (Table 11). In this series, which is compiled from over a period from 1920 to 1932, only twenty cases were considered resectable. Saltzstein and Sandweiss report 7.7 per cent as resectable. At the University of Würzburg, 20 per cent were resectable. On the other hand, the reports of some of our large world clinics vary from 25 to 65 per cent, the latter being statistics of Finisterer.[5]

The preoperative preparation by parenteral fluids, blood transfusion, and gastric lavage, the wide choice and adaptation of anesthesia, less traumatic technique in surgery, and the postoperative care with carbon dioxid-oxygen aeration of the lungs, have led to the extension of operability and a lowering of the immediate mortality. The immediate mortality in this series was 22 per cent, which compares favorably with the reports of others.

Life expectancy in this series with operation, or by exploration alone, averages three months; with palliative surgery, such as gastrojejunostomy, one year; and with partial resection three years or more. There are four patients still living; one, four years after operation; two, three and one-half years, and one, three and one-sixth years after operation. One was considered inoperable by the attending physician; but because of the very evidence and the marked mobility of the tumor to the palpating hand, he advised the patient to have an exploration. A large polyp, in which the malignant change occurred only at the tip and was entirely absent at the base, was found. One patient lived with entire comfort for five years, and then a further period of six months during which there was a gradual loss in weight and strength.

CONCLUSIONS

In the study of this series of cases, we observe that earlier diagnosis must be obtained before the only known proper treatment, surgery, can be given. To achieve this end, the following measures are important:

1. Education of the public as to the need of early and proper examination is vital.

2. Physicians must learn to consider the "cancer age," and to be satisfied only with a complete and proper examination; such investigation should include family history, present illness, physical examination, examination of the stool for occult blood, gastric analysis, blood examination, and examination with the x-ray.

3. A gastric lesion should be considered primarily surgical until proved otherwise.

4. Any person thirty-five years of age or more, who has any type of indigestion, and who fails to improve both clinically and by x-ray examination after a proper therapeutic test, should be treated surgically.

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DISCUSSION

Ernst Gehrels, M. D. (490 Post Street, San Francisco).—I can add nothing to Doctor Woolsey's excellent presentation of the diagnostic difficulties in cancer of the stomach.

In going over Doctor Woolsey's figures on operability, however, I notice a comparatively high percentage of gastro-enterostomies, forty-four out of ninety-seven cases. While the life expectancy after gastro-enterostomy in cancer is about one year, the period of well-being is much shorter, as an average not more than three months. By the time the patient has recovered from the laparotomy the inevitable decline is already evident.

On the other hand, palliative resection in the presence of a few small liver metastases, or irremovable enlarged glands, will give surprisingly long periods of well-being in many cases. Palliative resection, I think, ought to be done much more often than it has been in the past.

I have two cases in which microscopic examination of the line of resection could demonstrate cancer invasion at this point. To my own surprise, one of these

two patients lived over two years in perfect well-being, the other three years, before showing recurrence. It is a well-known fact that recurrence in cancer of the stomach is quite often delayed. While the small percentage of permanent cures is very discouraging, a large number of patients enjoy at least two years of perfect well-being before getting recurrence after partial gastrectomy.

The fact that even incomplete resection sometimes gives a fair result should not, of course, tempt the surgeon to resect too close to the tumor. Accelerated growth and rapid recurrence can often be expected to follow. After cutting across the stomach, I have lately been excising an additional strip of tissue from the proximal stump for immediate frozen section. If the pathologist reports presence of cancer cells in this strip, more of the stomach is resected, if technically possible.

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Thomas O. Burger, M. D. (1301 Medico-Dental Building, San Diego).—Cancer of the stomach is curable by only one method—surgery, and that surgery must be complete eradication of the growth and gland-bearing areas. Surgery, therefore, must be early.

Cancer in almost any location of the body is not *painful,* and that is true of cancer of the stomach, as shown in Doctor Woolsey's charts.

Cancer of the stomach untreated is fatal, and has a very distressing final stage. Cancer of the liver is not a painful illness. Surgery should be radically done with attempt to cure, even though the mortality rate is rather high in extensive resections. If the attempt at complete eradication is not successful, but the patient recovers from the surgery, the recurrence is usually much less terrible in its pain and starvation in the later stages than when no surgery is done. This is true, as already said, if the liver is the location of recurrence, as is often the case.

In some patients, high resection is very difficult, and we find that, especially in high resections, the De Petz sewing instrument makes not only easier work, but will cut the time of operation about twenty minutes. Twenty minutes may mean saving a life in a good number of these persons.

The x-ray is the principal agent in proving or disproving a stomach trouble in regard to cancer, and should always be resorted to in persons of forty years or over. Also a recheck should be made if any question as to whether there is an ulcer or cancer.

Early diagnosis and radical surgery means a large per cent of cures; and if not cures, a prolongation of comfortable living for a considerable period of time.

❦

John Hunt Shephard, M. D. (Medico-Dental Building, San Jose).—In analyzing Doctor Woolsey's records, Table 11, showing that only twenty of the ninety-seven cases coming to operation were resectable, closely agrees with other published reports. Viewed in the light of Table 4, showing the length of time these patients had been under medical care prior to operation, Table 11 places the profession directly "on the spot."

Our efforts in educating the laity concerning cancer has accomplished a great deal, and already our experience leads us to believe that the individual who feels a tumor in the breast, sees evidence of a lesion on the skin or lip, or develops a vaginal discharge in lesions of the cervix, not only seeks early advice, but when expectant or temporizing treatment is advised immediately consults another physician.

We must not expect the laity to be their own diagnosticians and tell us what to do. The symptoms of gastric disturbance should be as readily read by the physician as the suggestive signs of cancer of the breast or cervix are read by the patient, and the importance and necessity of a proper gastric examination recognized. While occasionally a patient whose symptoms have persisted for only a short time will refuse to submit to a complete examination, our experience leads us to believe that the physician is not infrequently responsible for the delay in making a thorough examination, either through his own suggestion, or by his ready consent to try this or that form of treatment, trusting that nature will effect a cure. It may be that this willingness to "wait and see" results from the physician's desire to curtail expenses to his patient; but since the same practice is found in charity clinics, I believe it is due to the lack of proper appreciation on the part of the doctor, of the importance of a thorough and complete study of every symptom of which the patient complains.

For years, every patient over forty years of age, consulting us on account of stomach trouble which has existed for more than one week, has been subjected to an x-ray examination before instituting treatment. Of those who have not complied with our rule, some have been cured by nature, some have had their examination made elsewhere, and some have returned with an inoperable carcinoma of the stomach.

When we of the medical profession cease to allow our patients to direct the course of our study, and insist on a thorough examination before instituting treatment, carcinoma of the stomach, as well as other maladies, will be recognized at a time when treatment may effect a cure.

ROENTGENOLOGIC CHANGES IN MALACIC DISEASE OF BONE*

By John D. Camp, M. D.
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THE present interest of the medical profession in the subject of malacic disease of bone was stimulated largely by the report of Mandl,[1] in 1926, concerning a case of osteitis fibrosa cystica generalisata (von Recklinghausen's disease), in which the removal of a parathyroid adenoma was followed by prompt clinical improvement. The literature concerning the subject from that time has become voluminous, and the existence of "hyperparathyroidism" as a definite clinical entity has become well established. Because of the profound influence of the parathyroid glands on the fundamental metabolism of calcium, and probably of phosphorus, it is not surprising that the question of parathyroid function, as related to other forms of malacic disease of bones of supposedly known and unknown origin, has been seriously considered. Some enthusiastic investigators of the subject see in the condition of hyperparathyroidism a ready explanation for the cause of such conditions as osteitis deformans (Paget's disease), leontiasis ossium, ankylosing polyarthritis of Oppel, giant-cell tumor, multiple myeloma, and scleroderma. Other observers, whose conclusions concerning the subject are tempered by experimental evidence, are less ready to accept such a broad application of the term "hyperparathyroidism." Because of such conflicting opinions no little confusion has resulted, particularly in the minds of roentgenologists, concerning the identity of certain forms of malacic disease of bone. Without doubt the present intensive clinical and investigative work that is being carried out on the subject of hyperparathyroidism and mineral metabolism in general will

*Guest-speaker paper. Read before the Radiology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

TABLE 1.—*Classification of Malacic Disease of Bone*

Group 1.—Atrophy associated with:	
Disuse	Neurotrophic disorders
Fractures	Circulatory disorders
Arthritis	
Group 2.—Congenital defects	
Osteogenesis imperfecta	
Fragilitas ossium	
Group 3.—Dietary insufficiency and avitaminosis	
Rickets	
Osteomalacia	
Puerperal	Celiac disease
Senile	Chronic idiopathic steatorrhea
Hunger and war deficiency	Kashin-Beck disease
Group 4.—Renal insufficiency	
Renal rickets	
Group 5.—Endocrine malfunction	
Hyperparathyroidism	Suprarenal disease
Hyperthyroidism	Diabetes mellitus
Cushing's syndrome (Basophilism)	
Group 6.—Miscellaneous: Etiology unknown	
Focal osteitis fibrosa cystica	
Osteitis deformans (Paget's disease)	

have a far-reaching effect on our knowledge and classification of certain forms of lesions of bone. With a full realization of this situation, the classification in Table 1 is offered, subject to revision. It does offer to my mind, at the present time, however, a reasonable basis for consideration of the roentgenologic changes in the various forms of malacic diseases of bone.

Because of the multiplicity of conditions that may affect the mineral content and structure of the skeleton, the early recognition of any particular disease by roentgenograms alone may be exceedingly difficult. Even in some advanced lesions, as will be pointed out subsequently, the ultimate diagnosis can be made only by proper correlation of the clinical data and other laboratory findings.

GROUP 1. ATROPHY

Atrophy of bone resulting from disuse incident to trauma, fracture or arthritis, neurotrophic disorder, or to circulatory disease, is characterized by its limitation to the affected part. Two types may be observed: (1) a homogeneous decalcification of bone with thinning of the trabeculae, which, however, remain sharply defined despite their thinness; and (2) a coarse, mottled form of osteoporosis, which has been confounded with multiple myeloma and with metastatic malignancy. This type has been called subacute atrophy of bone; but this is a misnomer, since it may occur in such chronic states as Buerger's disease, arteriosclerosis, and in peripheral nerve injuries (Fig. 1).

GROUP 2. CONGENITAL DEFECTS

In this group are placed those cases in which the bones are fragile, not because of any primary defect in calcium metabolism, but because of a primary defect in the mesoblast, as a result of which connective tissues are unable to build up a sufficient framework on which enough lime may be deposited. In this class are placed osteogenesis imperfecta and fragilitas ossium, probably the same pathologic process, except that the former concerns the fetal or infantile form and the latter the adult. Both have a tendency to be hereditary and familial. The entire skeleton is affected, and roentgenologic changes in the infantile form are characteristic. The bones have a bowed, misshapen, shortened, and thickened appearance. Callus is easily detected in the shafts at the sites of fracture. Compression of the thorax and fracture of the ribs are common. Ossification in the skull is deficient and irregular and, according to Knaggs,[2] has a peculiar mosaic appearance due to the irregular islands of bone occurring particularly along suture lines. In the adult variety, there is generalized osteoporosis and marked atrophy of the cortex and shafts of the long bones. Bowing, infractions, and fractures occur in varying degrees.

GROUP 3. DIETARY INSUFFICIENCY AND AVITAMINOSIS

Rickets and osteomalacia constitute the lesions of this group, which result from a deficient supply of calcium or phosphorus in the food or a deficient intake of vitamin D. There is little doubt that they are one and the same disease, except that rickets affects the growing child and osteomalacia the adult. The roentgenologic changes of rickets are so well known that they will not be reviewed here. In the past the term "osteomalacia" has, by tradition, been applied to the particular softening of bones occurring in pregnant and lactating women. Experience has shown, however, that such changes are not limited to pregnancy and lactation, but may occur whenever the diet is deficient in calcium, phosphorus, or in vitamin D. Notable examples of this include hunger and war deficiency, and the changes in bone occurring in celiac disease and in chronic idiopathic steatorrhea. The significant roentgenologic changes consist of generalized osteoporosis, marked thinning of the cortical bone, with softening, bowing, fractures, and generalized deformities. Of particular interest are the transverse osteoid zones, described by Loöser,[3] which simulate pathologic fractures (Fig. 2). They usually occur in well-advanced cases, and have a tendency to be symmetrically distributed. Osteomalacia is frequently confounded roentgenologically with the skeletal changes in hyperparathyroidism, from which it differs in that osteoporosis is homogeneous or coarsely striated rather than granular in character, and that cysts do not form.

GROUP 4. RENAL INSUFFICIENCY

Renal rickets is a condition developing in children in association with, and apparently as a result of, chronic nephritis. Roentgenologically, the findings vary a great deal in different cases, and sometimes in the same case at various times. Skeletal development is always retarded. In some instances there is a zone of osteoid tissue at the growing ends of bones which may not be different from that seen in ordinary rickets. However, there usually is something atypical about the findings, and the lesions may be asymmetrical, or different bones may be unequally involved. In

Fig. 1.—Coarse, mottled type of osteoporosis of humerus, resulting from old injury to brachial plexus.

Fig. 2.—Osteomalacia, resulting from dietary insufficiency and deprivation of sunlight. The osteoid zones which simulate fractures may be noted.

cases of long standing, there is a deep mottled zone at the ends of long bones which consists of osteoid tissue, cartilage, fibrous tissue, and calcified matrix. Distortion, infractions, and various deformities may result. Defects in subperiosteal calcification and a coarse, thickened appearance of the skull in advanced cases have been noted by Parsons [4] and Teall.[5]

GROUP 5. ENDOCRINE MALFUNCTION

Hyperparathyroidism.—This is a disease which is usually, if not always, due to a functioning adenoma of the parathyroid glands. As a result of increased production of hormone, there is disturbance in the metabolism of calcium and phosphorus, which results in certain generalized structural changes in the skeletal system, the roentgenographic appearances of which are characteristic. Roentgenologically, the fundamental skeletal change (demineralization) is revealed in the majority of cases as a uniform, miliary, granular type of osteoporosis. This peculiar form of generalized, mottled atrophy is distinct from the ordinary type seen in osteoporosis associated with acute and chronic disease of bone and in neurotrophic conditions. It is best exhibited in flat bones, especially in the calvarium (Fig. 3). Also, resorption causes trabeculae of bones to become indistinct in outline and cortical bone to be so thinned that, in early cases, the bones have a homogeneous ground-glass appearance. In some regions decalcification progresses to produce multiple cystic zones (osteitis fibrocystica generalisata) of varying size, which may be found within the medullary portion or below the periosteum. The jaws, pelvis, long bones, ribs, and metatarsal and metacarpal bones are favorite sites for such changes. The subperiosteal zones of resorption are especially well shown at the ends of the bones and in the phalanges. Cysts may reach a large size and become the site of pathologic fracture. Because the bones are soft, bowing, kyphosis, narrowing of the pelvis, and coxa vara are common. The onset of the disease is so insidious that, in early cases, it is difficult to distinguish it from osteoporosis resulting from other causes.

Following the removal of a parathyroid tumor, a very obvious change occurs in the structure of the skeletal system. As the resorption of calcium is arrested, the trabeculae of bones lose their indistinct outline and become well defined. As convalescence occurs, the density of the bone gradually approaches the normal, although such

Fig. 3.—Section of roentgenogram of skull revealing characteristic granular osteoporosis of hyperparathyroidism.

Fig. 4.—Osteoporosis associated with exophthalmic goiter.

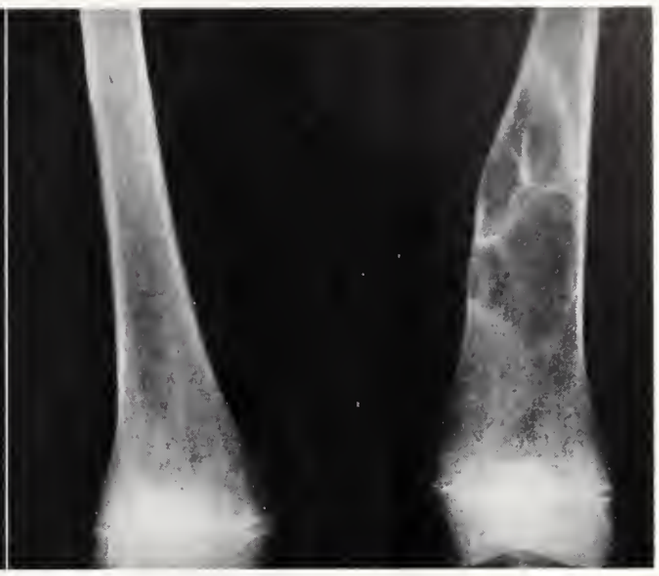

Fig. 5.—Focal osteitis fibrosa cystica. The presence of normal bone in the uninvolved areas distinguishes this condition from hyperparathyroidism.

deformities as bowing, kyphosis, and scoliosis will persist. Cystic regions gradually fill in and may disappear completely.

Hyperthyroidism.—The presence of osteoporosis in exophthalmic goiter was demonstrated radiographically by Kummer[6] in 1917. Since that time several observers have confirmed his observations. The demineralization is generalized and homogeneous in character, but is more marked in the spongy portions (Fig. 4). In one of a series of cases reported by Plummer and Dunlap[7] in 1928, necropsy revealed generalized osteoporosis, especially of the calvarium and ribs, the latter disclosing multiple fractures. According to Hunter,[8] there seems to be no relation between the duration of the disease, the degree of osteoporosis, and the values for phosphatase in the plasma, which often are high.

Cushing's Disease (Basophilic Adenoma of the Pituitary Gland).—Osteoporosis has been one of the features of a syndrome associated with basophilic tumors of the anterior lobe of the pituitary gland. In the few cases that I have seen, osteoporosis has been of the generalized homogeneous type and would not have been confused with the granular osteoporosis of primary hyperparathyroidism. Whether or not secondary hyperparathyroidism is present, due to hyperplasia of the parathyroid gland, has not been definitely established. The obesity, hirsutism, amenorrhea, and hypertension in Cushing's syndrome certainly are not present in primary hyperparathyroidism, and they should thus serve to distinguish the condition clinically if the roentgenographic changes are inclusive.

Suprarenal Disease. — The literature contains much conflicting data regarding the relation of the suprarenal glands to calcium metabolism and to osteomalacia, and the present status of our knowledge concerning this matter is well summarized by Golden and Abbott,[9] who concluded that, although suprarenal secretion either directly or indirectly influences calcium metabolism, and although the suprarenal glands may be indirectly involved in a pluriglandular imbalance in certain cases of osteomalacia, the evidence did not seem to justify the assumption that decalcification of bones results directly from suprarenal disease or dysfunction.

Diabetes Mellitus.—There is considerable evidence in the literature that a loss of calcium occurs in diabetes, especially in the presence of acidosis. Morrison and Bogan[9] found that atrophy of bone occurs among a certain number of children in whom diabetes develops before the ninth year, but not after that. Narrowness of the shaft and thinness of the cortex were noted in the bones of children with long-standing diabetes. Decalcification was observed in diabetes among adults by Golden and Abbott[10]; but according to their experience the question may be raised as to how much of this is of endocrine and how much of nutritional origin. They concluded that roentgenologic evidence of definite, important, skeletal decalcification among diabetic adults, which can be attributed directly to the disease, is lacking.

GROUP 6. MISCELLANEOUS—ETIOLOGY UNKNOWN

Focal Osteitis Fibrosa Cystica.—Localized or focal osteitis fibrosa cystica has been termed by von Mikulicz,[11] "osteodystrophia cystica juvenilis." This condition is frequently confounded with hyperparathyroidism because, roentgenologically and pathologically, the localized cysts simulate the cystic lesions of hyperparathyroidism. The condition is not related to hyperparathyroidism, and can be distinguished from it by the presence of normal bone in the uninvolved region (Fig. 5), and by the presence of normal amounts of calcium and phosphorus in the serum, and of phosphatase in the plasma.

Osteitis Deformans (Paget's Disease). — The roentgenologic characteristics of this disease, which may affect one or several bones, are so well known

that they need not be repeated here. Of more importance is the question whether or not this disease is a manifestation of hyperparathyroidism, as is claimed by some observers. By analogy with generalized osteitis fibrosa cystica, it would seem likely that Paget's disease is a disorder of mineral metabolism and, according to Turnbull,[12] there is only one definite histologic difference between the two diseases; this, however, is a big difference. In osteitis deformans, there is tremendous resorption of bone associated with tremendous apposition which completely alters the normal architecture, although apposition predominates. In generalized osteitis fibrosa cystica, widespread resorption of bone is the essential change, and excessive apposition is focal and relatively insignificant. Enlargement of the parathyroid glands has not been demonstrated in Paget's disease, and the levels of calcium and phosphorus in the serum are normal in contrast to the levels in hyperparathyroidism.

In addition to the conditions that have already been discussed, there occur certain other diseases which, because of their involvement of the osseous system, may be confounded roentgenologically with true malacic diseases of bones. These include metastatic carcinoma, multiple myeloma, diseases of the reticulo-endothelial system, and certain blood dyscrasias, particularly those of infancy and childhood.

The extensive involvement of the skeletal system in advanced cases of metastatic carcinoma and multiple myeloma may at first glance simulate the roentgenographic appearance of hyperparathyroidism. However, the multiple regions of destruction of bone in these conditions, in the calvarium especially, are easily distinguished from the miliary, granular, osteoporotic lesions in the skull in hyperparathyroid disease. True formation of cysts is absent in each of the above conditions, whereas it is common in hyperparathyroidism. In hyperparathyroidism the entire skeleton is affected, whereas in multiple myeloma and metastatic carcinoma zones of uninvolved normal bone can generally be found regardless of the extent of the disease. Because of marked skeletal destruction, determinations of calcium and phosphatase may be high. However, serum phosphorus, if changed, is higher than normal in contrast with the low serum phosphorus in hyperparathyroidism, except in the presence of severe renal injury when phosphorus in the serum may be elevated. The fact that hyperplasia of the parathyroid glands may occur in myeloma has been cited as evidence that this disease is of parathyroid origin. However, hyperplasia of the parathyroid glands has been observed also in metastatic carcinoma of bone, in rickets, and in osteomalacia, and the majority of observers agree that it is undoubtedly a secondary rather than a primary factor in these conditions. Also, reliable records exist of cases of multiple myeloma wherein the calcium and phosphorus metabolism was normal, and normal parathyroid glands were found at necropsy.

Disease of the Reticulo-Endothelial System.— Xanthomatosis (Schüller-Christian syndrome), according to Rowland,[13] is a rare, probably familial, constitutional disorder of metabolism in which a deposition of lipoid mixtures, particularly cholesterol and its esters, takes place, leading to characteristic hyperplastic reaction in the reticuloendothelial or histiocytic apparatus. It occurs most frequently in early childhood, but occasional adolescent and adult types have been noted. The resorption of bone is really a destructive process or pressure atrophy caused by contiguous accumulation of the granuloma-like lipoid masses in the connective tissue. The flat bones are more commonly involved than other bones, but any part of the skeleton may be affected. The plaque-like zones of destruction in the skull are quite different from the granular osteoporosis of hyperparathyroidism, also the unaffected bones and uninvolved regions of the same bone exhibit a normal structure in contrast to the diffuse involvement in hyperparathyroidism.

Gaucher's Disease. — This condition provokes changes in the skeletal system that are more similar to osteomalacia than to hyperparathyroidism. The crowding of bone marrow with so-called Gaucher cells results in atrophy of the spongy portions of the bones and widening of the intramedullary space. While the changes must be generalized, they are particularly obvious in the ends of the femur and humerus. According to Schinz,[14] change in the skull is observed only in advanced cases. Because of the hematologic findings and the presence of splenomegaly, this condition would not be confused clinically with osteomalacia.

Blood Dyscrasias. — The roentgenologic manifestations of these conditions have been described in detail by Karshner,[15] and by Diamond and Vogt. The latter investigators classify the whole group under the general heading "congenital anemias." Fundamentally, the changes in the osseous system are the result of a generalized hyperplastic condition of the marrow, which causes decalcification of the trabeculae and thinning of cortical bone. The changes are well shown in the calvarium where a generalized mottling or spongy appearance may be observed.

In the erythroblastic form, the medullary portion of the calvarium may be thickened, and the outer and inner tables correspondingly thinner. In a later stage of this disease, formation of new bone occurs, which is revealed as striations perpendicular to the tables. According to Karshner these striations in the skull suggest replacement of exhausted marrow by bone.

Among patients with leukemia, especially of the lymphatic variety, periosteal elevation and thickening due to subperiosteal leukemic infiltration, commonly occur. In addition, small or extensive foci of destruction of bone, which cause a moth-eaten appearance of the medulla, may be noted.

Clinically, the diagnosis of various congenital anemias is not difficult, although roentgenologically they may be confounded at certain stages with hyperparathyroidism and with osteogenesis imperfecta.

COMMENT

In reviewing the malacic diseases of bone from the standpoint of the roentgenologist, one cannot help but be impressed with the variety of roentgenographic changes that are presented when such a fundamental metabolic change as demineralization is provoked by various causes. Histologic studies offer a reasonable explanation for these variations and, in my opinion, a carefully correlated study of the microscopic changes and roentgenograms in the conditions noted in this paper will do much to further our knowledge of malacic diseases of bone, and of osteoporosis in general.

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REACTION FOLLOWING BLOOD TRANSFUSION*

REPORT OF AN UNUSUAL CASE

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AND
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Discussion *by Roy W. Hammack, M. D., Los Angeles; LeRoy Brooks, M. D., San Francisco.*

CASE HISTORY (By J. O. Haman). Mrs. R., thirty-two, was first seen in the Prenatal Clinic in November, 1932, five months pregnant.

The family history and past history were negative, except for typhoid and pneumonia. Catamenia began at seventeen, was always irregular, painful and profuse.

There had been four previous pregnancies, the first in 1927. This progressed normally until one week before labor was due, when headache, diarrhea, vomiting, edema, high blood pressure and albuminuria developed. She was taken to a hospital semi-comatose and in labor; the pregnancy was terminated with high forceps. She had several convulsions after delivery, which were treated by venesection. Later she was given a blood transfusion, her husband being the donor. A mild reaction, consisting of chills and fever, developed immediately, but soon subsided. Blood pressure and urine were normal after the puerperium.

The second and third pregnancies (1928 and 1930) aborted spontaneously at four months, each time with toxic symptoms developing prior to the miscarriage. The fourth pregnancy (1931) was complicated by hypertension and albuminuria throughout. Three weeks before delivery the patient developed oliguria and was under hospital observation for twenty-two days, when she began hemorrhaging. Labor was induced by a Voorhees bag, and a podalic version and extraction were performed. Urine and blood pressure were again normal after this pregnancy.

The present pregnancy was normal throughout, except for a blood pressure which remained at approximately 145/85. Slight traces of albumin were noticed at intervals. Hemoglobin was 65 per cent Sahli. Other laboratory tests and physical examination were negative, except for marked laceration and erosion of the cervix. Twins were diagnosed at the eighth month. Treatment during pregnancy consisted of iron in the form of Blaud's pills, and a low-protein, salt-free diet.

The patient was delivered on March 28, 1933, after a labor of six and three-fourths hours. Fraternal twins were born, each weighing six and one-half pounds. The first was a normal, vertex presentation; the second was in a transverse position, and a podalic version and extraction were performed. The hemoglobin on entry was 62 per cent Sahli, the urine showed nothing abnormal, and the blood pressure was 146/88. As the patient appeared very pale, and her hemoglobin was only 50 per cent Sahli, a transfusion of 400 cubic centimeters citrated blood was given on the third day after delivery, her husband again being the donor. The laboratory report showed both donor and recipient to be Type II (Moss), with the donor's cells showing slight rouleaux formation with the patient's serum. The donor was considered to be suitable if the blood were given slowly. The blood was injected into the median basilic vein at a rate of 7 cubic centimeters per minute, the procedure consuming fifty-five minutes.

Toward the end of the transfusion the patient suffered a severe chill which lasted twenty minutes. The temperature rose abruptly to 40.2 degrees centigrade, dropped to 36.8 degrees centigrade within twenty-four

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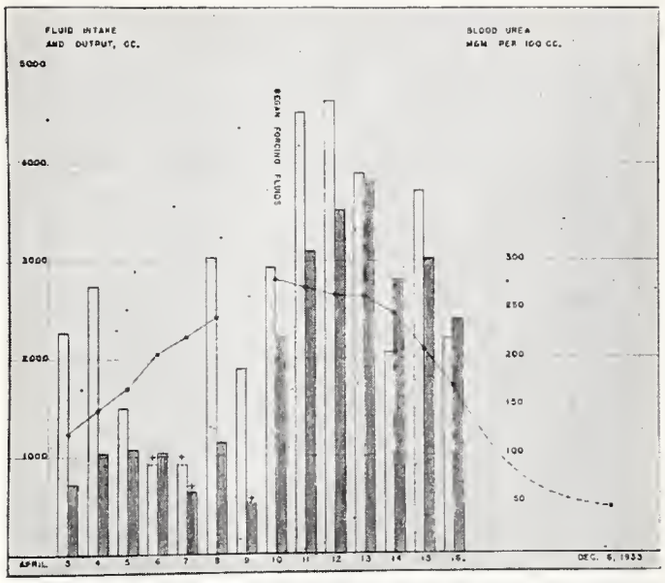

Chart 1.—Showing the daily fluid intake and output, and daily blood urea in milligrams per 100 cubic centimeters.

hours, and remained subnormal throughout her hospital stay.

No other symptoms were noticed for twenty hours after transfusion, at which time the patient was jaundiced and the centrifuged urine specimen showed the field completely full of renal failure casts. Five hundred cubic centimeters of 10 per cent glucose were immediately given intravenously. The urinary output for the next three days averaged about 500 cubic centimeters per day, in spite of a daily fluid intake of over 2,000 cubic centimeters. The blood urea rose daily from 123 to 282 on the eighth day, following which it gradually declined.

The hemoglobin was 42 per cent Sahli two days post-transfusion. Urine examinations showed light clouds of albumin and occasional granular casts for two weeks.

Treatment consisted of daily intravenous injections, saline hypodermoclyses, proctoclysis and iron in the form of iron and ammonium citrate (4 to 6 grams daily).

After a stormy course, the patient gradually returned to normal. On dismissal to a convalescent home, the blood urea was 171, hemoglobin 46 per cent Sahli, and the urine negative except for a very faint trace of albumin.

Eight months later, December 1933, the patient appeared in good health. Physical examination was negative, blood pressure 130/85, hemoglobin 90 per cent Sahli, blood urea 48, and the urine negative.

COMMENT

Study of the Blood of the Donor and the Patient (by C. E. Smith).—As has been stated, the original test of the blood showed no evidence of incompatibility, but after the reaction of the patient, the tests were repeated. The investigation of the recipient's and the donor's blood proceeded in three stages: first, rechecking the type of the donor; second, rechecking the type of the recipient; third, retesting their cross-matching. This last section was expanded to include matching the recipient's serum taken before, and the recipient's serum taken after transfusion, with various types of cells. All tests were performed in triplicate, one set being placed in the ice-box, one set kept at room temperature, one set incubated at 37 degrees centigrade.

First, the donor's type was rechecked. His cells were matched with Type II serum and were entirely satisfactory. They were completely agglutinated with Type III serum. The donor's serum was compatible when checked with Type II cells, but incompatible with Type III cells. Therefore, the donor is unquestionably a Type II.

Second, the recipient's type was retested. Her cells showed no agglutination or rouleaux with Type II serum, while they were completely agglutinated with Type III serum. Her serum agglutinated Type III cells, but showed only slight rouleaux formation with stock Type II cells. A more complete comparison of the recipient's serum compatibility is found in the third part of this study, but she also is clearly a Type II.

The third step was the cross-matching of the recipient's serum with the donor's cells, and simultaneously with stock Type II and Type III

TABLE 1.—*Matching of Recipient's Serum Taken Before Transfusion with Various Cells at Varying Times and Temperatures*

Cells Used for the Cross Agglutination	Ice Box Temperature		Room Temperature		Incubator Temperature 37 Degrees		
	24 Hours	72 Hours	24 Hours	72 Hours	2 Hours	24 Hours	72 Hours
Stock Type II	—	—	—	—	—	—	—
Donor's Type II	—	—	±	±	±	±	±
Stock Type III	Agg.	Agg.	Agg.	Agg.	Agg.	Agg.	Agg.
Type IV (R)	RRR	RRR	RR	RR	RR	RRR	RRR
Type IV (P)	—	—	—	—	—	—	—
Type IV (G)	RRR	RRR	RRR	RRR	RR	RRR	RRR
Type IV (C)	R	R	±	±	±	R	R
Type IV (S)	RR	RR	RR	RR	RR	RR	RR

Types According to the Moss Classification

—	Absolute compatibility.	Agg.	Agglutination.
±	Passable grouping, possibly slight rouleaux.	H	Slight hemolysis.
R	Slight rouleaux.	HH	Moderate hemolysis.
RR	Moderate rouleaux.	HHH	Severe hemolysis.
RRR	Severe rouleaux.	HHHH	Very severe hemolysis.
RRRR	Very severe rouleaux.		

TABLE 2.—*Matching of Recipient's Serum Taken a Few Hours After Transfusion with Various Cells at Varying Times and Temperatures*

Cells Used for the Cross Agglutination	Ice Box Temperature		Room Temperature		Incubator Temperature 37 Degrees		
	24 Hours	72 Hours	24 Hours	72 Hours	2 Hours	24 Hours	72 Hours
Stock Type II	R	R	R	R	RR	RRR HH	HHHH
Donor's Type II	RR	RR	RR	RR	RR	RR HH	RRR HHH
Stock Type III	Agg.	Agg.	Agg.	Agg.	Agg.	Agg. HHH	HHHH
Type IV (R)	RRRR	RRRR	RRR	RRR	RRRR	RRRR HHH	HHHH
Type IV (P)	—	—	—	—	—	HHH	HHHH
Type IV (G)	Agg.	Agg.	Agg.	Agg.	RRRR	HHHH	HHHH
Type IV (C)	RRR	RRR	RRR	RRR	RRR	RRRR HHH	HHHH
Type IV (S)	RRRR	RRRR	RRRR	RRRR	RRRR	HHHH	HHHH

Types According to the Moss Classification
Symbols used are the same as in Table 1.

cells, and cells from five proven universal donors (Type IV, Moss). Fortunately for the completeness of the study, a small amount of the recipient's serum taken for her original typing previous to her transfusion had been preserved in the ice-box. Simultaneous matchings were made using this pre-transfusion serum and post-transfusion serum. The crosses were again in triplicate: at ice-box, room, and incubator temperatures. The results are recorded in tabular form. In Table 1 is recorded the matching with the pre-transfusion serum, and in Table 2 that with the post-transfusion serum.

It is to be noted that the stock Type II cells tested with the patient's pre-transfusion serum showed entire compatibility, remaining entirely separate at all three temperatures for the entire seventy-two hours of observation. However, the post-transfusion serum caused slight rouleaux formation in twenty-four hours at room and ice-box temperature, and moderate rouleaux within two hours at 37 degrees centigrade. Most striking was the hemolysis which took place over night at incubator temperature. The "ghost cells" and remaining unlysed cells showed marked rouleaux formation. By seventy-two hours, although the cells in the ice-box and at room temperatures showed no further change, the incubated cells had completely hemolyzed and the "ghost cells" were firmly clumped.

The donor's cells in the patient's pre-transfusion serum did not show the slightest rouleaux formation after seventy-two hours at ice-box temperature. At room and incubator tempera-

TABLE 3.—*Matching of Recipient's Serum Taken Five Months After Transfusion with Various Cells at Varying Times and Temperatures*

Cells Used for the Cross Agglutination	Ice Box Temperature		Room Temperature		Incubator Temperature 37 Degrees		
	24 Hours	72 Hours	24 Hours	72 Hours	2 Hours	24 Hours	72 Hours
Stock Type II	RR	RR	±	±	—	$\frac{\pm}{H}$	$\frac{\pm}{H}$
Donor's Type II	RR	RR	±	R	—	±	$\frac{\pm}{H}$
Stock Type III	Agg.	Agg.	HH Agg.	HHH	Agg.	HHHH	HHHH
Type IV (R)	RRR	RRRR	RR	RR	RR	RR HH	HHHH
Type IV (P)	±	±	±	±	—	HHH	HHHH
Type IV (G)	RRR	Agg.	RR	RR	RRR	HHHH	HHHH
Type IV (C)	RRR	RRR	R	R	±	±	$\frac{\pm}{HH}$
Type IV (S)	RRR	Agg.	RRR	RRR	RRR	HHHH	HHHH
Recipient's	±	±	—	—	—	H(?)	H
Recipient's	—	—	Substituting normal saline for recipient's serum —	—	—	—	—

Types According to the Moss Classification
Symbols used are the same as in Table 1.

tures there was only a suggestion of rouleaux formation which one would unhesitatingly pass as entirely compatible. Again, the patient's post-transfusion serum caused marked rouleaux formation; and, after twenty-four hours of incubation, a marked hemolysis.

Stock Type III cells showed immediate agglutination with both pre- and post-transfusion serum; but only at incubator temperature, and only with the post-transfusion serum did they hemolyze.

The cells of five proven universal donors showed varying degrees of rouleaux formation. One, P., did not form rouleaux with the patient's pre-transfusion or post-transfusion serum at any temperature. Nevertheless, the cells were completely hemolyzed in twenty-four hours at 37 degrees centigrade by the post-transfusion serum. Another, S., had been typed at least twelve times previously with all types of serum, and had never formed rouleaux. In common with the other three Type IV's (Moss), his cells showed a much more severe rouleaux formation with the post-transfusion serum. Their cells were severely or completely hemolyzed in twenty-four hours at 37 degrees centigrade by this post-transfusion serum. There was no hemolysis with the same serum at the other temperatures, nor with the pre-transfusion serum at any temperature.

It is to be regretted that the patient's own cells were not matched with her pre-transfusion and immediate post-transfusion sera.

The question naturally arose as to whether the recipient's serum would ultimately return to its pre-transfusion status; and on September 6, 1933, over five months after the transfusion, a recheck of the patient's blood was made.

Again, the recipient's serum was matched with the donor's cells, stock Type II and Type III cells, and the cells of the five universal donors who were previously used. In addition, her own cells were matched with her own serum and also observed in normal saline. The results are noted in Table 3. The final readings of the matchings more nearly resemble those of the immediate post-transfusion than of the pre-transfusion matchings. Of all the cross-checks made, the donor's seem to have been most constantly the best. His cells at room and at incubator temperatures fared nearly as well as in the pre-transfusion matching, though a slight degree of hemolysis still occurred. However, in the cross-matching of the patient's own cells and serum, there was a slight hemolysis in the incubator and a suggestion of rouleaux in the ice-box. It is true that the recipient's serum no longer caused severe rouleaux with Type IV (C) except at ice-box temperature. Also, the degree of rouleaux formation with the other Type IV's (Moss) is in a smaller degree than immediately after transfusion, except at ice-box temperatures. Nevertheless, the hemolysis at incubator temperature continued to be severe. However, the most interesting change was found in the two-hour observations. The two-hour incubator temperature readings, as well as two-hour ice-box and room temperature observations, again failed to warn of the danger that doubtless lurks in ever attempting to transfuse this patient.

SUMMARY

A case of transfusion reaction with uremia manifestations and recovery has been described. Preliminary typing had shown apparent compatibility. A recheck of the matching immediately after the reaction demonstrated a marked alteration in which the recipient's post-transfusion serum caused severe rouleaux and hemolysis. A rematching five months later revealed that, although the recipient's blood had not as yet returned to its pre-transfusion state, the methods of typing ordinarily used no longer revealed incompatibility.

DISCUSSION

Roy W. Hammack, M. D. (657 South Westlake Avenue, Los Angeles).—I have read with interest this report of an unusual reaction following blood transfusion. A number of similar reactions have been reported in recent years, among them the reports of Von Daesten and Cosgrove, in *Annals of Internal Medicine,* July, 1933; Stewart, in *Medical Clinics of North America,* September, 1931; and the more extensive report of Bordley, in *Archives of Internal Medicine,* February, 1931. While in some of the cases reported incompatibility of the bloods was later proved, in others no incompatibility could be shown by laboratory methods. In the case reported by Doctors Smith and Haman, hemoglobinuria was not recorded, but jaundice resulted, suggesting hemolysis of the transfused blood. This, with the other phenomena of the reaction, makes it similar to those reactions which follow transfusions with incompatible blood, as were others in which complete compatibility was shown by laboratory studies.

Is it possible that sodium citrate, pure or impure, is a factor? In the reports with which I am familiar, it is stated that the citrate method was used. I refer to those in which compatibility was apparently satisfactorily demonstrated. In a fairly large experience with the multiple syringe method in which uncitrated blood is transfused, I have not known renal insufficiency to occur following transfusion of compatible blood. However, citrated blood is probably used more frequently than uncitrated blood, and renal insufficiency following citrate transfusion is certainly uncommon.

Bordley discusses the attractive theory that the kidneys may be sensitive to some substance in the transfused blood, and "that the renal insufficiency results from a reaction of the nature of an anaphylactic shock." My associates and I have noticed that transfusion reactions, chills or fever, or both, are more likely to occur after the use of donors who have recently eaten a meal, particularly a meal rich in protein, than after the use of "fasting" donors. We have seen, in one instance, hemoglobinuria with chill, malaise and fever following transfusion of blood two hours after a heavy protein meal. In this instance, both the patient and the donor were Group 3 (Moss). Their bloods had been cross-agglutinated, and all tests were repeated after the transfusion, showing complete compatibility. The urine also contained numerous large granular casts and albumin. The casts and albumin disappeared within a few days. Blood nitrogen studies were not made, but there was no suppression of urine and no symptoms suggesting marked renal insufficiency developed.

It is interesting that, in the case reported by Doctors Smith and Haman, the donor was one who had previously given blood to this patient. We have noticed a few times unusually severe febrile reactions,

following the use of a donor the second time for the same patient, after a considerable time interval. However, this has by no means always occurred. I have been told of two severe reactions occurring in the practice of other physicians in Los Angeles following the use of the same donor after a considerable period of time. In one case there was anuria for twenty-four hours, and in the other urinary suppression over a longer period, with development of uremic symptoms. No reactions had followed the first transfusions with these donors. Is it not possible that in such cases the patient becomes sensitized to some unusual constituent of the donor's blood?

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LeRoy Brooks, M. D. (490 Post Street, San Francisco).—Jansky in 1907, and Moss in 1910, classified human blood into four groups. This classification was based on their discovery of two iso-agglutinin substances called A-B in serum, and two iso-agglutinogen a-b, in red blood cells.

Their assumption that there were only two iso-agglutinable substances has been shown to be incomplete. Guthrie and Huck in 1923 demonstrated the existence of a third iso-agglutinin D-Q, and a third Iso-agglutinogen d-q. This has been confirmed by others, and forms the basis of the so-called subgroups. These findings furnish a plausible explanation for some of the hitherto unexplained post-transfusion reactions that occasionally occur, even though the rules of selection of donors are followed. It is not an uncommon experience to find by cross-agglutination test that a donor's blood of the accepted group can be demonstrated in the laboratory to be incompatible.

It is also known that the titer or potency of the agglutinable substances varies. After an individual has had one transfusion, their titer is usually strengthened. Theoretically it is just as plausible to assume that the less constant iso-agglutinable substances D-Q, d-q are susceptible of change in titer as the more constant iso-agglutinins A-B, and iso-agglutinogens a-b. This would explain the reactions in the case here reported, as well as the laboratory findings. The first transfusion was followed by a mild reaction; the second transfusion from the same donor by a more severe reaction, due to an increase in the titer of the iso-agglutinable substances probably belonging to a subgroup.

It will be noted that the patient's serum was compatible with stock Type II cells after the first transfusion, but not after the second transfusion. The peculiar and contradictory behavior of her cells with well-known groups, and the fact that the patient's serum after the second transfusion and severe reaction caused a questionable hemolysis of her own cells in twenty-four hours in the incubator, and some definite hemolysis at the end of seventy-two hours, suggest that the last word in groups and subgroups of human blood has not as yet been said. This case demonstrates also the desirability of allowing more time for the laboratory test than is usually practiced when time is available.

It has been my experience that reactions of the character here considered follow transfusions in Type II patients. The literature shows that the experiences of some others have coincided in this respect. This has led to the belief on the part of some that subgroups are more frequently formed in Type II individuals than in other groups. In turn, this experience has led to some clinics and some individuals preferring Type IV (Moss), or universal donors, when transfusing Type II patients. I prefer Type IV (Moss) donors to Type II donors for Type II patients, unless unusually large transfusions are necessary. Grouping of both donor and patient and cross-agglutination testing should be a definite routine.

I think Doctors Smith and Haman should be commended on this case report, and particularly on the follow-up laboratory work which they did after the post-transfusion reaction.

DEAFNESS—ITS HUMANITARIAN PROBLEMS*

A PLEA TO OTOLOGISTS

By George E. Coleman†
San Francisco

Discussion *by Harold A. Fletcher, M. D., San Francisco; Francis L. Rogers, M. D., Long Beach; Isaac H. Jones, M. D., Los Angeles.*

I WISH to express my great appreciation of the privilege accorded me to address such a representative body of the otologists of the state of California.

From a scientific standpoint many definitions of hearing have been given. It is usual, however, to define deafness simply as a failure to hear. It is true that we respond emotionally in either a favorable or an unfavorable manner to all sensory stimuli normally received, but the entire picture of what happens to a human being whose hearing was once normal, but who has irreparably lost all or a large part of it, cannot be summed up in the single word "deafness."

The understanding of this handicap—it is really an affliction to the unadjusted—and the reaction to it of the normally hearing, of the adventitiously deafened, and of these latter to others who have lost their hearing, differ as widely as do the various constituents which make up the personality complex of each. No one knows all about deafness. However, since the great movement for the economic, social and psychologic betterment of the hard-of-hearing and for prevention began, a far more thorough comprehension of the many problems relating to it has been attained.

ORGANIZATIONS FOR THE HARD-OF-HEARING

This movement, on a broad scale, initiated and maintained almost entirely by the deafened themselves, began in 1906 with the formation of the Nitchie Service League for adult lip-readers, which later became the New York League for the Hard-of-Hearing. In 1919 the nine leagues then in existence (there are now over one hundred) were organized into the American Federation of Organizations for the Hard-of-Hearing. Dr. Wendell C. Phillips is now its honorary president and Mrs. James F. Norris, a specialist in the welfare of the hard-of-hearing child, is president. Several other eastern otologists have had a more or less continuous and active interest in the national work of this federation, and their influence as presidents or members of the board of managers has greatly contributed to its success. I regret that I have not the time to outline the manifold activities, now greatly curtailed because of the depression, of this organization, many of which redound directly to the credit and advantage of otologists.

Conferences, to which the leagues send a large number of representatives, are held annually, and

* Read, by invitation, before the Eye, Ear, Nose and Throat Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

† The author is not a doctor of medicine, but is himself, one of the deafened, and is a Research Assocate in Medicine in the Hooper Foundation.

papers by eminent specialists in all matters which may pertain to deafness are read and discussed. These specialists include otologists, physiologists, physicists, psychologists, psychiatrists, and pediatricians; also social and welfare workers in the various fields of prevention, vocation and rehabilitation, as well as eminent men in the fields of publicity and education. Speakers from the leagues exchange ideas concerning their problems of a more intimate nature. Lip-reading tournaments are also held. The proceedings of these conferences are published and, with the monthly journal (now alas! only a bulletin), are distributed as widely as possible throughout the country as propaganda on behalf of the hard of hearing. Anyone who has sat for three days through one of these conferences, and, if hard-of-hearing, has worn the group ear phones, will begin to realize what deafness is and means to the estimated ten million people in the United States with this handicap, as well as to the many more normally hearing individuals who necessarily come into close and constant contact with them.

EFFECTS OF ACQUIRED DEAFNESS ON PERSONALITY

Space does not permit a description of the repercussions upon the entire personality of one who has acquired deafness since he learned to speak. This has been so ably set forth in the address to the American Otological Society, of Betty C. Wright,[1] executive secretary of the American Federation of Organizations for the Hard-of-Hearing, and in that, among many others, of Gordon Berry,[2] who recently addressed the Section on Laryngology, Otology and Rhinology of the American Medical Association, and in numerous books and articles by other otologists and lay workers, that practically nothing can be added along these lines. Doctor Berry has clearly explained the psychological effects of loss of hearing in the different age groups, and the various adjustments necessary for each. Miss Wright, in her plea to otologists, has pretty well covered the entire field and has particularly cautioned them as regards the choice, temperament and training of their office assistants. Both of these writers are seriously handicapped themselves, and are truly, therefore, experts in the subject of deafness in its widest implications. I earnestly urge each of you to study these two addresses and the discussions which followed their delivery, and to familiarize yourselves with the proceedings of these conferences.

WHEN THE HARD-OF-HEARING PATIENT CONSULTS THE PHYSICIAN

This brings me definitely to the subject expressed in the title of this paper. For a better understanding of my theme you must consider your patient's reaction to his otologist, and your relation to your patient which, unfortunately, due to your busy office hours, is not always as personal as it might be. An adult deafened person generally reaches you long after her hearing loss has become noticeable. She has had time to see her hearing diminish little by little, and to experience the fear, perhaps of the loss of her "job," and the inevitable worry and bleak despair that her various contacts in life bring down upon her. After sufficient urging, having heard through a friend of some cure you have made, although other otologists may have given her a hopeless verdict, she arrives at your office filled with hope. An examination, perhaps, discloses a decidedly chronic condition with some evidence of a present middle-ear inflammation and non-patent tubes. You say to yourself, "prognosis very bad; perhaps slight hope, at least of temporary amelioration." You, therefore, suggest that she return for a course of treatments—inflation, diathermy, or what not—and tell her not to hope for too much. Almost inevitably the time comes when you have to say, "Nothing more can be done. Your hearing loss will probably continue to progress." Her expression almost frightens you. You commence talking about a hearing aid, joining a league, and lip-reading.† Your patient is not interested. She is even annoyed, and becomes rebellious and resentful. You are sorry for her, but you have heard it so often. In a last effort to calm her you try to tell her about the accomplishments of Beethoven and Edison and, to cap the climax, how thankful she should be that she is not going blind. Please never tell a patient that; the two afflictions are no more comparable than a streptococcus and a ciliated sinus cell. By this time your patient is in a useless rage and leaves the office. She perhaps later joins a local league for the hard of hearing, and in a group of close friends discusses the "inhumanity and stupidity of otologists." Perhaps she tells them that you "blew up her ears" long after you knew that it would not do any good. You may not realize how often you have engendered a feeling of dissatisfaction by not gradually preparing your patient for your almost inevitable verdict.

ON THE SOCIOLOGY OF THE DEAF AND THE NEAR-DEAF

It seems pertinent here to quote what Doctor Richardson,[3] recently deceased, told the otologists nine years ago at a meeting of the Triological Society:

"In the otologic field, during the last forty years, we have made masterful progress along many lines; but in the field of the humanitarian aspect, in sociology of the deaf and the near-deaf, we have not as a body shown that aptitude and endeavor that becomes us as one of the great specialties of medicine . . . we have been too much engrossed to give . . . attention . . . to the prevention, humanitarian, and sociological problems that lie before, but just outside its actual endeavor. As a result of this want of interest and through consideration of the near medical problems which have and are constantly arising, many lay organizations have been created, which threatened or have taken away from the profession that leadership which should be vested in and rightfully belongs to

†How I hope that none of you feels that lip-reading is not *always* indicated. As is well known, lip readers do not often develop the mental traits so common among those who fail to read the lips, and merely joining a league may change the whole psychology of a patient.

the medical profession. In the past it has been the time-honored method of most otologists, when all physical help that could be offered for these individuals failed, to turn them forth to become helpless derelicts or furnish food for the quacks. . . . Looking into the faces of those attending the Federation Conference held in Washington, as I did in addressing them last year, one could not but be impressed with their earnestness of purpose and desire for advice and direction. All otologists should be in touch with the organization in their immediate community, or with the Federation, in order to aid in guiding their work. . . . We, on our part, must recognize the call to duty, meet the obligations cheerfully, and evidence our appreciation of the confidence and honor thus demonstrated."

To this I might add that you all know the relation of confidence which exists between the general practitioner and his patients. His years of service and sympathetic understanding endear him to their hearts. They tell him all their troubles, have faith in his judgment, and receive comfort and encouragement from his advice. The bond between the otologist and his present or former patient should be and can be, and I am sure, in some instances, is just as close. Help in every way that you can to make it mutual, and the patients who are truly crippled and often bewildered will turn instinctively for support and further advice to the man above all others whom they long to feel *must* know all about deafness. May I urge you better to prepare yourselves for this task? Please do not scorn to read articles ostensibly written for the hard-of-hearing. They often contain much in the field of psychology and welfare work which may arouse your keen interest. If you address a local league or a Federation Conference, try to arrange your time so that you can remain to hear other addresses. You do not know what a heartening influence your mere presence has upon such a gathering.

HOW OTOLOGISTS HAVE COÖPERATED WITH HARD-OF-HEARING ORGANIZATIONS

I can imagine some of you saying to yourselves, "Aside from all this, just what does the speaker want us to do?" I will tell you exactly, but before doing so let me outline briefly a few of the activities already initiated by otologists in coöperation, to some extent, with the American Federation of Organizations for the Hard-of-Hearing. First, let me reiterate that I am not implying that a good many otologists are not interested in these organizations. They are, but not very actively, and a far larger number, because the matter has not been brought home to them, are not interested at all. As of last summer, Doctor Hayden [4] stated that there were eighty-four otologists in Chicago who were sufficiently interested to contribute to the Chicago league every year, and they have been ready to coöperate with every request that has been made of them. The local otological societies of Chicago and Cincinnati joined the local leagues in a body. A movement has been started in the medical schools to train young otologists along the lines I am discussing. Doctor Sonnenschein is chairman of the committee which is making contacts with these schools.[5] The Federation has established an invaluable contact, through Dr. Arthur Cramp, with the American Medical Association in the protection of the deafened from worthless hearing aids, and quack remedies and procedures in general. As I have stated, a few outstanding otologists, in very many respects, have been and still are the guiding spirit in many of the policies of the American Federation, and often act as its representative before public gatherings. Clinics have been established by leagues in some of the eastern cities. Surveys and studies of the large reservoir of material within the Chicago, New York, and Washington leagues have been made and Shambaugh [6] and Fowler [7] have published their findings and conclusions. Dr. Phillips heads the Committee on Deafness of the New York State Medical Society. Dr. Newhart is chairman of the Minnesota State Medical Society Committee on Deafness Prevention and Amelioration, and also of a similar committee of the American Academy of Ophthalmology and Otolaryngology. Demonstrations of the group-testing of the hearing of school children, of the use of group-hearing aids, and of lip-reading, are given before these bodies. I have time only to stress the necessity for further sponsorship by these committees of the study by competent scientists leading to the standardization of hearing aids and selective amplification. Verne O. Knudsen and Harvey Fletcher have given many valuable suggestions along these lines.

This will be enough to indicate what these committees can accomplish, and in what ways cooperation on a national scale by all of you can supplement the work of the organizations for the hard-of-hearing. If more of you will do this, you will intensify within yourselves a spirit of wider service, and by your influence and by the assumption of a greater responsibility, you will engender an increased sense of coöperation and loyalty among the hard-of-hearing toward your profession.

SOME OF THE SCIENTIFIC PHASES OF CHRONIC PROGRESSIVE DEAFNESS

I wish to embrace this opportunity to touch upon a few of the scientific aspects of chronic progressive deafness in so far as they affect the League members. As Newhart has pointed out, otologists are sincere in their desire to save their patients unnecessary expense or, perhaps, they may have overlooked an opportunity to overcome the indifference of their patients in the matter of conserving residual hearing. Often local, systemic or environmental conditions are present in these patients, or may arise, which may tend to hasten the progress of their hearing loss. Many take large doses of aspirin, or other harmful drugs for colds and headaches. They, especially the younger members, may need a complete medical check-up at regular intervals. If these people see a desire on your part to coöperate actively with their organizations, I am convinced that they personally can be induced to continue to seek your advice to your mutual satisfaction long after you may

have once felt that nothing more could be done to help them.

As I have stated, several attempts have been made at intervals by lay workers and individual otologists to bring the rank and file of your profession to a greater realization of what Doctor Richardson has called its "duty" and its opportunity; if not for actual leadership, at least to share more actively in this great movement on behalf of the hard of hearing. The results have not been very encouraging. I am convinced that it is not your fault as a body, but that it has thus far failed because there has been no concrete plan nor coördinated effort to acquaint you with its necessity for the hard of hearing and its great advantage to the profession.

A PLAN TO ENLIST COÖPERATION OF OTOLOGISTS

A few months ago I submitted to about sixteen prominent otologists in the United States a tentative "plan" to enlist your coöperation. The majority of the replies I received as to its feasibility were of a very favorable nature. In general the "plan" included:

A. *For the Lay Organizations*

A series of articles and talks in the leagues, explaining, by means of charts, elementary otology and the field of research, the ideals and the ethics of the medical profession, the necessity for prevention, for a frequent check-up, for clinics at which the services of the otologists should be remunerated; and, above all, to show the various groups that the otologists, by their willingness to coöperate actively along specific lines, to attend occasional pantomimes or lip-reading contests in the leagues, are not only specialists in otology but, by trying to familiarize themselves with every other field of deafness, are anxious to give them the benefit of their advice and understanding. This, of course, will require tact and some self-sacrifice on your part.

B. *For the Otologists*

(1) To increase your own interest in the prevention, discovery ‡ and amelioration of deafness in children and the conservation of residual hearing in the deafened adult. (2) To make you, throughout the country, more Federation- and League-minded. (3) And thus to enable you more efficiently to advise and encourage the hopelessly hard-of-hearing.

I am fully aware of the demands upon the time, the strength and the pocketbook of the modern physician. As a whole, you are an idealistic and altruistic body of men, and to achieve, what I am sure is the paramount aim of every one of you—to fit himself that he may best serve the hard of hearing in all ways—I suggest:

1. That the Otolaryngological Section of every state and county medical society, as well as every otologist, personally join the American Federation of Organizations for the Hard of Hearing at $1 per year, as well as a local league of which the dues vary. By joining the Federation you will play a very large part in helping to reëstablish the organization on the firm foundation which the financial crisis has so seriously undermined. You will receive the Federation *News* and a local league bulletin. In the former, especially, there is much to be gleaned that will be of inestimable value for those who have intimate contact with the hard-of-hearing. Keep these on your waiting-room table, and thus give information to many who do not know of the work for their benefit.

2. That you try to form a committee on deafness prevention and amelioration in the California Medical Association, and induce the Association at large to join the Federation.

3. That you form a committee in every one of your local societies (county and/or city) to keep in touch with the progress by lay workers along the lines mentioned in this paper. Your local committee will coöperate actively with a committee from the local league which can be formed specifically for round-table discussions with you at stated intervals on all problems, scientific and lay, which may be of mutual interest. In counties in which there are no leagues for the hard of hearing, it would be well for all of you, individually, to join the Federation.

4. Later, when and if this general plan shall have been adopted in a few other states, a council might be formed which would be composed of members of your national societies. This council would act in an advisory capacity to your various local committees, make suggestions regarding their activities, and act as consultant in your relations with the Federation and the leagues—a sort of federation of otological advisory committees to the organizations of the hard-of-hearing—another nice, long title for somebody to shorten.

Shall the otologists be organized first, or shall the matter first be presented to the leagues, as outlined in the paragraph having the caption, "For the Lay Organizations"? Without entering into a discussion of the matter, my earnest suggestion is that the otologists should organize first. Join the Federation and leagues, and these, I am sure, will be only too grateful and willing to coöperate in every possible way.

IN CONCLUSION

If the members attending this meeting will discuss the general proposition which I have roughly outlined, resolve to form active committees composed of interested members, as I have suggested, and will individually join the American Federation of Organizations for the Hard of Hearing at this time, and local leagues later, such action will constitute an outstanding example for other otologists of the country to follow, and the battle for the hard-of-hearing will soon be won. I leave the matter in your hands, and will personally contact your committee with the Federation, if desired.

Hooper Foundation for Medical Research,
Parnassus Avenue.

‡ Berry [2] has stated that the hearing loss of children may progress to 30 per cent without an understanding, by busy and unanalytical parents, of what the trouble is.

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DISCUSSION

Harold A. Fletcher, M. D. (490 Post Street, San Francisco).—This paper, coming from a non-medical man, who one of the deafened, is himself interested in investigating the causes, cure and prevention of deafness, and one who, with a thorough understanding of both the scientific side of deafness as well as the side of the deafened, knows probably almost as much about deafness as most otologists, is particularly good to have as a just and fair criticism of our specialty, together with suggestions, worked out for a better relationship and coöperation between the ear specialists and the deafened patient.

The frank criticisms of the otologists which Mr. Coleman has made are offered in the friendliest manner by a friend of the otologists. The criticisms, too, are quite merited; and we can each of us look back on many cases when, realizing that we could do very little further or perhaps nothing at all, we have dropped the patients with a few futile words of advice. What a great percentage of us as otologists, through sheer lack of understanding and sympathy, or through pressure of practice and work, have helped to turn aside this large group of from fifteen million to twenty million patients here in the United States, and allowed them to drift into the hands of quacks and fakes. How fortunate for us, then, that through very little help of our own, the various leagues and the American Federation of Organizations for the Hard-of-Hearing have been formed on a basis entirely friendly to us, rather than on a basis of enmity and suspicion. How fortunate we are that, on the other hand, another large and powerful cult, with interests opposed to the medical profession, has not been formed.

It is my earnest hope that the suggestions made by Mr. Coleman will fall on receptive ears, and that his constructive plan will be carried out by the members of this section of the State Medical Society.

Francis L. Rogers, M. D. (219 East Tenth Street, Long Beach).—It is heartening to hear this question so ably discussed by Mr. Coleman, who understands, in a remarkable degree, this subject, and also the otologists' point of view, and who speaks our language. He has mentioned some of our shortcomings, and it is well that we consider them with open minds.

The new era in medicine into which the otologist must enter rests on the soundest principles, and offers an ever-widening field of public health education. Physicians have been tongue-tied too long, and we and the public have suffered thereby. If we do not inform the people in matters of health, the self-seeking quack will offer them a substitute, and they will follow him, to their ruin and our discredit.

Not so many years ago one of our otologists was asked the question, "What do you do with your incurably deafened patients?" He replied, "I send them to my enemies." Is not this about what has been happening to many of these unfortunates? Is our task finished when a diagnosis is made and medical treatment no longer avails? Should that be our final word to the incurably deafened today? Certainly, both of these questions should be answered in the negative.

These cases require mental, social, and economic rehabilitation. A program of intelligent guidance by a skilled otologist is invaluable, I believe, to these patients in readjusting and reconstructing their shattered hopes and broken lives. Probably 90 per cent of our ten million hard-of-hearing, regardless of age, can be aided by lip-reading. School children with normal vision become good lip-readers in six months. Older persons require more time to master the art of "hearing with their eyes."

All schools, from the third grade up to and including high school, and schools for adult education, should provide adequate classes for the hard-of-hearing. Deafened teachers, specially trained in lip-reading, make excellent teachers for the higher grades and adults. There are now available many such teachers whose qualifications are superior. During the World War, our Government established a rehabilitation service for disabled soldiers, including those afflicted with a loss of hearing. This was later extended, under State auspices, to disabled citizens generally, the Government sharing equally with the State in the cost of the service. This includes financing and reëducation of the deafened. Most of these unfortunates require extensive changes in their social and economic life.

This public service coöperates well with the lip-reading schools, the hard-of-hearing leagues, and the otologists.

Another very important work for the deafened is that which is being performed by organized groups of the hard-of-hearing themselves. There are now more than two hundred leagues for the hard-of-hearing in the United States, with a total membership of many thousands. California has the honor of having the largest number of leagues of any one state of the Union.

A majority of the leagues are members of the American Federation of Organizations for the hard-of-hearing. These leagues and the Federation have had the active assistance of some of our ablest otologists. They need the coöperation of every one of us, and their leaders have appealed for a more active participation upon our part in a program both of prevention and rehabilitation of the deafened.

I believe that we should now join the Federation and familiarize ourselves with all their league activities.

The audiometer marks a new departure in otologic practice. It is now possible to measure with it and chart at one time, with a reasonable degree of accuracy, the hearing of twenty-five to forty persons of understanding age. Many minor defects of hearing otherwise difficult of detection are, by this means, found. Those showing defects of hearing may then receive an individual audiometric check-up before being referred to the family otologist for treatment. The value of regular audiometric examinations, once or oftener each school year, is now being recognized by our educators, school executives, and boards of education as a socially and economically sound policy. Thousands of children are repeating their grades annually because they cannot hear. The child's time and millions of dollars of the taxayers' money are thus being wasted. It is estimated that in Los Angeles County alone, this annual loss is approximately twenty-five million dollars, and in the State more than three times that amount. Many school systems have already installed the 4A Audiometer, and a few have placed its use in charge of a specially trained physician. These examinations should be made as compulsory as school attendance.

The advent of the audiometer has stimulated the profession of audiometric engineering to added re-

search, the result being a number of very excellent electrically energized hearing devices. The next step for otologists is better audiometric examinations.

Two generations ago the science of ophthalmology made possible examinations of the human eye by means of refraction. The manufacturing optician quickly brought his skill to our aid, and the result was a revolution in the mechanical correction of many otherwise hopeless refractive errors. Then came the optometrist with his short-cut methods of refraction, and the widely commercialized dispensing of glasses.

Today we otologists are facing a like situation in the possible development of a new non-medical cult which may adopt the title of "Audiometrists." We greatly need a better standardization of hearing defects which may be aided by mechanical means. If we stand unitedly behind the leagues for the hard-of-hearing and other agencies mentioned, they will be our allies in carrying to the public lessons in prevention and cure of deafness. We may yet offer the deafened themselves valuable assistance which we have not generally attempted heretofore. It seems to me that the time is here when the otologists should take some definite coöperative action to promote a closer relation with the leagues for the hard-of-hearing, the American Federation of Organizations for the Hard-of-Hearing, and other agencies I have mentioned, and offer leadership in a crusade to the end that preventable deafness may be banished from this earth.

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Isaac H. Jones, M. D. (1930 Wilshire Boulevard, Los Angeles).—There is only one consideration that is of the slightest importance—the best interest of the patient. Now fortunately for the patient, the leagues for the hard-of-hearing, the teacher of lip-reading, the distributor of artificial aids for hearing, and the otolaryngologist, all have a common purpose and a common usefulness in meeting the needs of the deafened individual. Mr. Coleman's paper emphasized the immediate need of mutual understanding, and cooperation of these four groups that are trying to aid the deafened.

As to hearing aids, there is an untold number of fakes and charlatans. But the deafened individual should know that we are grateful to the splendid organizations who have done such sincere and scientific work in the development of aids to hearing, which are now so dependable and helpful that we should prescribe them to a large proportion of the deafened individuals who come to us. For every one patient who now uses a hearing aid, there are fifty more who should have them.

In certain instances we can prevent deafness if the patient comes to us soon enough. In some cases we can arrest the progress of deafness by treatment or surgical interference. Those, however, who have a chronic deafness and whose auditory area is sufficiently large to tolerate amplification, will receive our best service if we make a careful diagnosis by precision measurements, and then prescribe the particular hearing aid that would best meet the needs of the individual patient.

Unfortunately, so few of us, though equipped to diagnose, are not able to make precise measurements. With the best intent in the world, certain hearing-aid agencies are now arranging for a "technician" to make the "diagnosis of deafness." This, we know, they cannot do. Very soon, however, the public will go to the hearing-aid agencies for diagnosis. Under these circumstances it is clear that instead of having a closer interest in these problems the otolaryngologist will drop out of the picture.

Mr. Coleman's desire to have all of us coöperate with the leagues for the hard-of-hearing will be difficult to accomplish if patients do not come to the otolaryngologists with their problems. Even at the present time, it is only too true that the patient looks to us, simply to find out if we can "restore the hearing."

What, then, is best for the patient? Surely the answer is a precise diagnosis made by the otolaryngologist. With a thorough knowledge of the need of the individual, he may then prescribe medical or surgical treatment; or may advise the patient not to have such treatment. If the patient is seriously handicapped, he will urge the patient to join the League for the Hard-of-Hearing and to take lessons in lip-reading; and if the "auditory area" is sufficiently large, he will prescribe that hearing aid which is best fitted for the individual need of his patient.

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Mr. Coleman (Closing).—I am very grateful for the cordial reception of my paper, and I am especially appreciative that my friendly criticisms have been taken in the spirit in which they were made.

I am glad that the question of the "audiometrists" has been raised in connection with the organized hard-of-hearing. Doctor Jones' remarks are very timely. He fears that the public may go to the hearing-aid agencies for a diagnosis which would be based upon hearing measurements alone. He believes that your coöperation with the organizations for the hard-of-hearing will be difficult to accomplish if patients do not go to the otolaryngologists with their problems. All of this is, of course, a possibility. The medical profession always has had difficulty in reaching the ear of the layman in any way which is ethical. I have shown you how this can be obviated, in the case of your specialty, as regards the hard-of-hearing; that is, by personal round-table discussions of committees from both groups of subjects, both scientific and lay, of mutual interest. Explain to the leagues the medical point of view concerning the criteria for accurate diagnosis, and through their local and national journals you will reach a large number of the very persons who are most in need of your advice.

CONTUSED INJURIES OF PERIPHERAL NERVES—THE VALUE OF EARLY SURGICAL TREATMENT*

By Howard A. Brown, M. D.
San Francisco

Discussion *by Homer D. Dudley, M. D., Seattle, Washington; Howard C. Naffziger, M. D., San Francisco; E. W. Rockey, M. D., Portland, Oregon; Carl W. Rand, M. D., Los Angeles.*

CERTAIN difficulties arise in deciding upon the proper treatment of injuries to peripheral nerves when the evidence indicates that the nerve has not been actually divided. Such conditions as partial paralysis of the muscles supplied by the nerve in question, an incomplete sensory loss, or the absence of any laceration, make one hopeful that recovery will occur spontaneously; and in some instances this does happen. On the other hand, a long period of time may be required before any evidence of recovery is seen, or early improvement may become arrested and the condition subsequently require operation. As a result of such a delay, we encounter atrophy of muscles, stiffness of joints, and trophic changes, which increase the disability and further delay the return

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* Read before the Industrial Medicine and Surgery Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

of function. It is well known that, in the treatment of injuries to the peripheral nerves, the longer the interval between trauma and beginning regeneration, the less satisfactory is the final outcome. This was well demonstrated in the treatment of injuries to peripheral nerves during the recent war, when long delay in surgical treatment resulted in much less restoration of function than in those cases in which operation was performed soon after injury.

SCOPE OF THIS DISCUSSION

In this discussion, we are considering only cases of contusion of the nerves, with a physiological disturbance of function, but without loss of anatomical continuity. Such injuries may result from a variety of sources, such as fractures, pressure from a cast, tourniquets, direct trauma over the course of the nerve, and other causes, as indicated in Table 1. The initial injury produces a contusion of the nerve and the adjacent soft parts, which may result in an immediate loss of function in the nerve, either partial or complete. As healing takes place, with the formation of scar tissue in and about the nerve, the result may be either an increased loss of function or a continuation of that already present.

In the case of F. D. (No. 15), a male, aged forty years, we find an example of direct trauma over the trunk of the radial nerve, with immediate complete loss of function.

On August 6, 1930, this patient received a severe bruise over the outer aspect of the upper portion of the left arm. There was no fracture or laceration, but the arm was swollen and discolored as a result of hemorrhage beneath the fascial planes. Immediately after the injury the patient noted that he was unable to raise his wrist or extend his fingers. Examination revealed a complete paralysis of the radial nerve with sensory loss over the radial distribution. There was no improvement, and some three weeks after injury, the radial nerve was exposed in the upper arm and was found to be surrounded by considerable dense scar tissue. The nerve itself contained intrinsic scar, which was dissected free gradually after repeated injections of the nerve with Ringer's solution. The actual nerve elements remaining in this case were decreased greatly in volume. It was four months before the first sign of restoration appeared, demonstrated by slight function of the extensor carpi radialis and suppinator longus muscles. Continuous improvement followed, and eight months after operation the patient had regained very good function of all muscle groups.

Another type of trauma was responsible for the nerve injury in the case of C. H. (No. 1), a male, aged thirty years, who fractured his lumbar spine on January 18, 1929.

He was placed in a body cast which came up snugly in the axilla on either side, causing him to hunch his shoulders. About six weeks later he noticed some discomfort in the region of the right deltoid muscle, with increasing numbness over the distribution of the circumflex nerve. At the same time he noted difficulty in raising the arm, and this weakness and sensory loss gradually became more pronounced. On examination on June 1, 1929, a complete paralysis of the deltoid muscle was present with associated sensory loss over the distribution of the circumflex nerve. Operation was performed on June 5, 1929, at which time the circumflex nerve was exposed in the axilla, and was found to be surrounded by moderately dense adhesions. Neurolysis of the nerve trunk was performed over the involved area. On July 21, 1929 (the first record available after operation), the patient exhibited slight motor power in the deltoid muscle, but had little sensory improvement. Progress thereafter was steady, and by May, 1930, eleven months after operation, power had returned completely, and the only residual symptom was a very slight paresthesia on exertion.

TABLE 1.—*Types of Trauma Found*

Trauma	No. Cases
Pressure from cast	2
Contusion of nerve, without laceration	10
Splinting or bandaging	6
Fracture of a bone near a nerve	11
Pressure from tourniquet	2
Manipulation of joint	2
Diathermy burn	1
	34

In other instances the initial trauma may produce a partial loss of function, with increasing damage from the subsequent formation of scar tissue.

The case of A. P. (No. 21), a male, aged thirty-three years, illustrates this type of trauma. In April, 1932, a tractor ran over the upper portion of the patient's left arm. There was great swelling of the upper arm, particularly in the region just above the elbow. Marked numbness of the hand persisted for some days, but the portion supplied by the ulnar nerve soon regained normal function. Weakness and sensory loss over the median distribution, however, persisted, showing slight improvement for a few weeks, followed by gradual additional impairment. Examination three months after injury revealed considerable atrophy of the forearm and muscles of the hand supplied by the median nerve, with sensory decrease over the corresponding distribution. Because of the increase of symptoms, operation was performed on November 7, 1932. The median nerve was exposed just above the elbow, where much scar tissue was encountered immediately beneath the superficial fascia. The nerve itself was surrounded by considerable scar tissue and there was definite intraneural fibrosis. Neurolysis of the nerve was done. The following day the patient noted definite improvement in sensation. Eight months after operation the patient had regained 85 per cent of normal function and improvement was continuing.

In the ulnar region this progressive loss is seen frequently, and often it is gradual but continuous. We find an example of this in the following case.

G. S. (No. 29), a male, aged sixty-two years, injured his left elbow on May 31, 1929. There was no fracture, merely a contusion about the elbow, and over the course of the ulnar nerve. Subsequent to this, upon resuming his work, he noted slight numbness in the ulnar portion of his hand, and somewhat later, weakness and atrophy, with the entire process continuously growing worse. When he was seen first, some nine months after injury, there was evidence of

TABLE 2.—*First Recorded Improvement in Function After Operation*

Time	No. of Patients	Per Cent
One to ten days	24	70
One month	4	12
Two months	2	6
Three months	1	3
Four months	1	3
No early report	2	6
	34	100

TABLE 3.—*Summary of Cases*

Case No.	Type of Trauma	Nerve Affected and Degree of Involvement	Interval Trauma to Operation	First Recorded Improvement P. O.	Ultimate Recorded Improvement, P. O.
1	Pressure, body cast.	Axillary, complete, stationary.	5 months	7 weeks motor	Eleven months; 100 per cent except for slight paresthesia.
2	Direct at elbow; no fracture.	Ulnar, about 90 per cent loss progressive.	2 months	3 weeks sensory	Four months; sensation normal, power good, atrophy gone.
3	Direct, shoulder.	Axillary, complete stationary.	7 months	1 day sensory	Ten days; slight motor return; unable to follow further.
4	Open reduction radius at wrist flexion splint.	Median, complete stationary.	6 weeks	7 weeks sensory	Fourteen months; complete recovery except slight paresthesia of thumb.
5	Direct at elbow, flexion bandage across chest.	Ulnar; marked involvement; progressive.	8 months	5 days motor and sensory	Five months; great improvement motor and sensory; unable to follow further.
6	Supracondylar fracture, humerus.	Ulnar; complete stationary.	3 months	3 days sensory	Eleven months; complete return.
7	Colles's fracture manipulation and splint.	Median; incomplete progressive.	2 months	3 weeks marked	Six months; 90 per cent return.
8	Fracture, upper part of fibula cast.	Common peroneal; incomplete; marked; stationary.	11 months	6 days motor	Twelve months; complete return except slight weakness extensor of great toe.
9	Fracture upper third of ulna.	Median; 90 per cent loss; stationary.	2½ months	4 days motor	Twelve months; 100 per cent.
10	Direct, dorsal surface, forearm.	Radial; complete stationary.	2 months	2 days motor	Three months; 100 per cent.
11	Fracture humerus.	Radial; incomplete marked; stationary.	5½ months	4 days sensory	Six months; excellent return.
12	Tourniquet above elbow.	Median, ulnar; incomplete; stationary.	2 months	2 weeks motor	Five weeks; almost complete return.
13	Fracture humerus manipulation and cast.	Radial; complete stationary.	6 months	No early record	Sixteen months; 100 per cent.
14	Fracture head of radius; operative removal and cast.	Radial; complete stationary.	2 months	No early record	Six months; 100 per cent except slight weakness extensor of thumb.
15	Direct, upper arm.	Radial; complete stationary.	3 weeks	4 months motor	Eight months; good function and power; was still improving.
16	Direct, upper arm.	Radial; complete stationary.	5 weeks	3 days motor	Two months; almost complete return.
17	Supracondylar fracture; manipulation of elbow.	Ulnar; complete stationary.	11 months	10 weeks motor	Sixteen months; 90 per cent return.
18	Direct, head of fibula.	Common peroneal; complete stationary.	9 weeks	1 day motor	Five months; approximately 75 per cent return; improvement continuing.
19	Direct, upper arm.	Radial; complete stationary.	6 weeks	1 month motor	Eight months; almost complete return.
20	Pressure, aeroplane splint.	Median and ulnar complete; stationary.	6 months	9 days motor	Eleven months; 50 per cent return.
21	Direct, upper arm.	Median; about 75 per cent loss; progressive.	7 months	2 days sensory	Five months; 85 per cent return.
22	Reduction dislocation of shoulder; bandaged in flexion across chest.	Median and ulnar; incomplete stationary.	8 months	2 days sensory	Two weeks, continued motor and sensory improvement; no further follow-up available.
23	Fracture tibia and fibula with cast.	Common peroneal complete; stationary.	3 months	1 day motor and sensory	One year; 100 per cent.
24	Direct, over head of fibula.	Common peroneal; complete; stationary.	6 months	1 day motor and sensory	No further record could be obtained.
25	Fracture humerus open reduction and plate.	Radial; complete stationary.	4 months	2 days sensory	Three months; continued motor and sensory improvement; unable to follow further.
26	Tight bandage of arm in flexion across chest for injury to shoulder.	Ulnar; incomplete marked; stationary.	3 months	5 days motor and sensory	No further record.

TABLE 3.—*Summary of Cases (continued)*

Case No.	Type of Trauma	Nerve Affected and Degree of Involvement	Interval Trauma to Operation	First Recorded Improvement P. O.	Ultimate Recorded Improvement, P. O.
27	Fracture, elbow flexion splint.	Ulnar; 90 per cent loss progressive.	5 months	5 days sensory	Fourteen months; almost complete return.
28	Injury to shoulder; flexion bandage of arm over chest.	Ulnar; complete stationary.	4 months	3 days sensory	No further record.
29	Direct to elbow.	Ulnar; 75 per cent loss progressive	9 months	5 days motor and sensory	Nine months; complete return.
30	Fracture, elbow; arm strapped across chest.	Ulnar; 90 per cent loss progressive	8 months	4 days sensory	Two weeks; continued sensory gain; no further record.
31	Diathermy burn over head of fibula.	Common peroneal complete; stationary.	5 months	1 day motor and sensory	Continued motor and sensory improvement; 50 per cent motor return in four months.
32*	Fracture, humerus with cast.	Radial; complete stationary.	6 weeks	4 days complete sensory return	Continued motor and sensory gain to refracture nine days later.
33*	Refracture humerus.	Radial; complete stationary.	2 months	7 days motor and sensory	Two months sensory return, almost complete motor return about 60 per cent.
34	Tourniquet above elbow.	Median, radial and ulnar; complete motor loss; slight sensory decrease.	6 weeks	1 day motor	Four months; power and sensation 100 per cent.

* Cases 32 and 33 are the same patient, who had a repetition of injury and two operations.

paresis of the ulnar nerve, amounting to 75 per cent, and the loss of function was increasing steadily. Operation on February 26, 1930, revealed a thickened and scarred nerve on which a neurolysis was done. The nerve was moved forward. Five days later definite improvement in both power and sensation was reported. Progress thereafter was continuous, and in nine months' time the restoration was almost complete.

PHYSIOLOGIC INTERRUPTIONS AND ANATOMIC SEVERANCE

The question may arise as to how one can differentiate between physiologic interruptions and anatomic severance. In the majority of cases the history and type of injury are sufficient to make the differentiation easy, but if the nerve lesion is complete some question occasionally may arise. No satisfactory test has been devised as yet to determine accurately, from external examination alone, whether one is dealing with an anatomic or a physiologic block. Injuries associated with fractures will, on occasion, present this problem, and operation will be necessary before the answer can be obtained.

This situation was encountered in association with a supracondylar fracture in a child, who had immediate complete loss of ulnar function.

D. M. (No. 6), male, aged eleven years, received a supracondylar fracture of the right humerus in October, 1932. Immediately afterward there was anesthesia over the distribution of the ulnar nerve in the hand, and he could not flex his ring and little fingers. The arm was placed in a position of flexion for three or four weeks. The anesthesia and weakness of the hand persisted. Examination three months after the injury revealed a complete ulnar paralysis with marked atrophy of the hand and forearm, as well as considerable contracture and stiffening of the ring and small fingers.

At operation the ulnar nerve was exposed, but there was no evidence that the nerve had been divided anatomically. Adhesions were found about the nerve, binding it tightly in the groove at the elbow, and the nerve itself showed considerable intrinsic scar tissue. Following the neurolysis, the nerve was transposed anteriorly. Three days later there was definite tingling over the ulnar portion of the hand, as contrasted with complete anesthesia before. Continuous improvement resulted thereafter, and a complete restoration of function was achieved eleven months after operation.

TREATMENT

The treatment advocated by the majority of surgeons for nerve injuries of the type considered here has been that of continued observation. Such a scheme includes proper support of the involved muscles, together with passive exercise, massage or electrical stimulation, from four to six months, with careful examination at intervals to determine whether or not any signs of recovery have appeared. If at the end of this time no sign of improvement has been found, exploration of the nerve is advocated in an attempt to restore its function.

The wisdom of such treatment is not substantiated by the facts at hand. It is important to consider the changes that occur in the affected parts during the period in which nerve function is absent. Varying degrees of degeneration occur in the nerve fibers peripheral to the injury, depending on the amount of damage to the nerve. The same alteration occurs in the extremities that is found associated with the anatomical severance of a peripheral nerve. The involved muscles become atrophic, trophic changes occur in the anesthetic areas, and stiffness of the joints and vasomotor changes appear. All of these changes frequently are marked within a few weeks after the injury, and in some cases present a serious

obstacle to the restoration of useful function in spite of a later return of nerve impulses.

A striking example of this, one which stimulated us in this survey, was seen in the nerve injuries resulting from the use of a tourniquet. This was in no way comparable to a Volkman's paralysis, but represented a localized contusion of the nerve trunk.

B. H. (No. 34), a female, aged twenty-five years, had a small abscess on the outer side of the left hand opened on September 29, 1932. During this procedure a tourniquet was applied just above the elbow for a period of thirty minutes. When the patient awakened from the anesthetic, there was a complete paralysis of the forearm and hand, below the point at which the tourniquet had been applied. Very little sensory involvement was noted over the entire area. Considerable doubt existed as to whether or not the condition was functional, and for this reason the patient was given gas to determine whether any movement was possible during the stage of excitement. No movement was obtained in the involved extremity, which ruled out a functional disturbance. Atrophy soon appeared, and marked stiffness of the joints of the fingers followed, in spite of daily physiotherapy. Because of the rapid atrophy and stiffness, the nerves at the point of application of the tourniquet were exposed six weeks after injury. The median, ulnar, and radial nerves showed definite intrinsic scar over a distance of from 2 to 3 centimeters. A neurolysis of all three nerves was performed, and on the day after operation the patient noted a slight movement of the abductor muscle of the thumb. There was constant improvement of all of the muscles involved, though the stiffness of the joints in the fingers presented a difficult problem. Approximately four months after operation the patient had regained complete power and sensation in the involved members, and her only disability was referable to the limitation of movement in the joints in the fingers. This is a striking illustration of the fact that, even after satisfactory restoration of nerve function, the patient may be handicapped by stiffness of the joints, which could have been avoided by earlier surgical intervention.

COMMENT

With such ideas in mind it seemed worth while to review the cases of this particular type which had been seen in this clinic. Thirty-four cases which have been operated on were found among the various cases of injury to peripheral nerves. One factor has been common to all the cases collected, namely, the type of pathologic change encountered at exploration of the nerve. An intraneural scar was found between the nerve bundles sufficient to abolish or hinder nerve impulses. Also scar tissue of varying degrees of density was found in the tissues about the nerve, which in some cases provided an additional constricting effect. The object of operation was the removal of these constrictions, with the replacement of the nerve in a bed as free as possible from constriction and scar tissue. The technical procedure was very similar in all cases. The nerve was dissected carefully from surrounding scar tissue, using sharp dissection in so far as possible. Neurolysis then was done by injecting the nerve with Ringer's solution, both above and below the scar, and dissecting away the thickened sheath. The intrinsic scar tissue between the nerve bundles also was freed by repeated ballooning of the nerve with Ringer's solution, and careful dissection of the fibrous bands was accomplished by repeated careful incisions parallel to the nerve fibers. In this type of injury it would be exceptional to find the nerve damaged severely enough to require resection and resuture, and in our series of cases this necessity did not arise. Wherever possible the nerve was transposed to a new position, away from the area of trauma and scar. This was done most frequently in cases of injury to the ulnar nerve at the elbow, and is illustrated by the following case.

P. R. (No. 17), male, aged thirty-nine years, sustained a supracondylar fracture in November, 1930, and considerable limitation of motion in the elbow resulted. In August, 1931, a manipulation of the elbow was done under general anesthesia, and following this the patient noted numbness of the ulnar distribution of the hand and weakness of the muscles of the hand. Two months later, at the time of our examination, the paralysis of the ulnar nerve was still complete, and there had been no evidence of improvement. At operation on October 20, 1931, the ulnar nerve was found to be bound down over a distance of about 10 centimeters at the region of the elbow. The nerve itself showed intraneural scar and, after neurolysis, still appeared to be in poor condition and atrophic. In order to avoid further trauma, it was transposed anterior to the internal condyle. A bed was made in the pronator radii teres muscle, and the nerve was placed in this new location without angulation or constriction. After ten weeks some slight function was noted in the flexor carpi ulnaris and the flexor digitorum profundus muscles supplied by the ulnar nerve. The progress was slow but continuous thereafter, and sixteen months after operation examination revealed a return in function of approximately 90 per cent.

Evidence of returning function, either motor or sensory, was noted in from one day to a few weeks after operation in a majority of our cases (Table 2). This was true in many instances in which there had been complete motor and sensory paralysis existing several months prior to operation.

This early return is well illustrated in the case of A. F. (No. 23), male, aged thirty-two years, who received a compound fracture of the left tibia and fibula on December 9, 1923. This was treated in a Thomas splint for two weeks, and then was placed in a cast which was removed in six weeks' time. A foot-drop was present when the cast was taken off, and no improvement followed during the next six weeks. Examination revealed a complete foot-drop with sensory loss over the distribution of the external popliteal nerve. At operation on March 20, 1924, the nerve was exposed in the region of the head of the fibula, and was found to be tied down by scar tissue and intimately associated with the callus of the fracture. The nerve was freed and neurolysis was performed throughout the damaged area. The following day the anesthesia was completely gone, and the patient was able to move his toes upward slightly. Gradual, continuous improvement occurred thereafter, and power was approximately normal in a year's time.

This factor of rapid improvement after operation, even though it has been preceded by prolonged loss of function, is demonstrated even more strikingly in the case of H. H. (No. 31), a male, aged twenty-one years.

This patient sustained a fracture of the femur on June 18, 1932, and was treated in a Thomas splint for two months, and subsequently was in a cast for a month. Later some diathermy was given to the patient, and a burn was sustained over the head of the fibula with considerable scar formation. Soon after, the patient noticed some difficulty in holding up his

foot, and the weakness became complete during the next few days. He was examined about five months later, and at that time there was a complete paralysis of the muscles supplied by the external popliteal nerve, with corresponding sensory loss. Neurolysis was performed on February 10, 1933; a moderate amount of scar tissue was found in the subcutaneous tissues about the nerve, with definite intrinsic scars between the nerve bundles. Upon awakening from the anesthetic the patient noted definite improvement in sensation, and the following day some restoration of movement in the toes was present. Dorsiflexion of the foot appeared on the same day, and improvement thereafter was continuous. By August, 1933, motor power had returned to about 50 per cent of normal function.

Operative treatment of this type seldom necessitates hospitalization for more than a few days or a week, and does not require a long period of immobilization of the extremity involved. The risk of such a procedure is negligible, and the discomfort to the patient is slight and transient. The average patient returns to any physical capacity which he had before operation within approximately two weeks after operation. In all cases that could be followed satisfactorily, continuous improvement resulted after operation, with restoration of function varying from 50 to 100 per cent. A few of the patients, after showing early evidence of improvement, unfortunately could not be found, in order to complete their follow-up records.

The most significant fact obtained from this analysis is the evidence of beginning restoration of function in the nerve within a relatively short time after operation. The prompt evidence of returning function after operation, and the continued progress thereafter, left no doubt as to the responsibility of the operation in effecting this improvement. Considering this fact, it is apparent that the period of disability in such cases could be shortened considerably by an early operation. In addition, some of the permanent changes, resulting from atrophy and stiffness in the joints, may be avoided if improvement can be obtained before these conditions have become marked. We feel that if there is no evidence of returning function in the nerve within one month after injury, or if a partial impairment is becoming more advanced, operation is indicated, as it offers the best prognosis in shortening the disability and gains the greatest restoration of function. It has been argued that a few of these patients will improve spontaneously over a period of several months. This is true; but, on the contrary, the majority will have prolonged periods of disability with a continuation of atrophy and lessening of the chance of ultimate recovery, regardless of the results of future procedures.

A summary of the thirty-four cases studied, indicating the salient points reviewed in this discussion, is found in Table 3.

SUMMARY AND CONCLUSIONS

1. Certain types of injuries to the peripheral nerves, resulting from contusion of the nerve and adjacent tissues, produce a physiological interruption of the nerve pathways, with loss of function.

2. In most cases a neurolysis is followed by an early and continuous return of function in the nerve.

3. Early operation in such cases will shorten the period of disability and markedly lessen the permanent changes that may result from muscular atrophy and stiffness of the joints occurring in those in whom surgical treatment is neglected.

4. If no motor or sensory evidence of improvement has occurred within one month after injury, or if a partial involvement is becoming more advanced, operation is advisable.

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DISCUSSION

Homer D. Dudley, M. D. (Cobb Building, Seattle, Washington).—There are many problems related to the various types of peripheral nerve injuries, and this paper deals with one of the most interesting and at times most confusing.

It is well known that contusion of a nerve may result in varying degrees of dysfunction, and it is for this reason that a diagnosis or prognosis is frequently difficult. Since there is no way clinically of knowing the degree of pathology in or about the nerve, diagnosis must be somewhat speculative or determined by developing signs and symptoms. Undoubtedly the after-effects of scar tissue formation is always due to primary hemorrhage intra- or extraneurally, and the amount of hemorrhage cannot be known. It has been my experience that a comparison of the clinical findings of carefully made examinations at different times will be the best guide in diagnosis. A test of value, for sensation in injuries of the median and ulnar nerves, is firm pressure of the examiner's fingernail over the flexor surface of the tip of the distal phalanges of the index and little fingers. One should not overlook the possibility of an atypical nerve distribution.

Too often, a diagnosis is made and the patient is advised to "wait and see." This practice of watchful expectancy and masterful inactivity has in many instances deprived the patient of the only chance for recovery. This same "do nothing" method has been too frequently employed on occasions of known nerve severance.

The author emphasizes the seriousness of secondary trophic and atrophic disuse changes, some of which in delayed treatment result in a high degree of permanent partial disability. The series of cases herein recorded are so clearly presented and of sufficient number to serve as a useful guide in the proper treatment of patients with this type of nerve injury.

The use of a pneumatic tourniquet will serve to prevent the occurrence of ischemic paralysis. The antique Esmarch or similar types of bandage should never be used.

I heartily concur with the essayist in advocating an early exploratory operation in all serious nerve contusions or questionable cases. A properly performed exploratory operation can do no harm and may be the only means of restoring function which might otherwise be permanently lost.

Howard C. Naffziger, M. D. (University of California Medical School, San Francisco).—Following palsies of peripheral nerves, the degree and duration of atrophy of the muscles usually determine the extent of the restoration of function. Such atrophy is not lessened by electrical stimulation, massage or other such measures, as shown by McLeod and his co-workers. Quite apart from the economic loss involved in a long period of disability, the ultimate outcome and the degree of permanent disability will bear a direct relation to the duration of the paralysis.

The cases cited by Doctor Brown give striking evidence of the rapid recovery of function following

properly conducted surgical treatment, as contrasted with the methods too frequently seen in practice. The risk of such surgical treatment is negligible. The early improvement in function is striking. Evidence of improvement in 82 per cent of the patients within one month after operation, and of many within a few days, gives strong support to his contention. I believe that Doctor Brown's conclusions are conservative and sound. Adoption of the methods of management which he advocates will do much not only to improve the results in such palsies of peripheral nerves, but also to promote earlier and more complete recovery.

It is a fact that many patients with palsy of the peripheral nerves recover without surgical intervention. If such improvement is early, that is, within a matter of days or two or three weeks, and if satisfactory progress continues, there is, of course, no indication for operative treatment. If, however, the paralysis is stationary or deepens, or if no improvement occurs and atrophy progresses, there is good reason to advise surgical treatment.

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E. W. Rockey, M. D. (330 Medical Arts Building, Portland, Oregon).—I feel that this is a most timely paper, and that the early, careful exploration, with both intrinsic and extrinsic neurolysis, which has been advocated, will save not only unnecessary periods of temporary disability, but will lessen permanent disability as well. Doctor Brown has vividly described the trophic changes which so frequently accompany nerve irritation. These changes are responsible for the poor results obtained when operative interference is long delayed, and has led us to believe that nerve irritation is often of more serious consequence to the patient than complete division of a nerve.

There is another factor, doubtless implied in Doctor Brown's paper but which has not received the stress which it deserves in the discussion of this type of case. This is the factor of pain. We have observed several cases of partial division of a nerve in which there was present not only a trophic change, but a distressing degree of pain. At times there are areas of hyperesthesia, where the slightest touch is painful. The degree of pain and hyperesthesia ranges all the way from mild distress to the severest types of causalgia in which the situation of the patient is tragic. In some cases the pain resembles that seen in spinal cord or thalamic lesions.

We do not know exactly why the pain and trophic changes appear with such frequency in cases of nerve injury, but there is a tendency to ascribe it to lesions of the sympathetic fibers traveling with the somatic sensory and motor fibers. It has been noted that the combination is most prone to appear when the injury involves either the median nerve in the upper extremity, or the tibial nerve in the lower. These nerves are known to contain a richer supply of sympathetic fibers than others supplying the extremities. We do know, however, that if the condition is permitted to persist, then the end-results are destined to be unsatisfactory. The pain and hyperesthesia hinder the use of physiotherapy, and the trophic changes if long continued leave a degree of atrophy, stiffening of the joints and limitation of motion that are difficult or impossible to correct.

Doctor Brown mentions transposing the ulnar nerve anteriorly and putting it into a muscle body. He makes no mention of the use of fat transplants surrounding a nerve where it has to lie in a scar tissue bed. I would like to have him comment on his use of this procedure.

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Carl W. Rand, M. D. (523 West Sixth Street, Los Angeles).—Neurolysis and endoneurolysis are by no means new procedures. I think that it is a fairly common experience for one to dissect out injured peripheral nerves, and free them from their bed of scar tissue. This is usually called external neurolysis, and in itself, in the majority of cases, will suffice to give considerable improvement. If the nerve is indurated to any extent, the sheath is usually opened and held back by traction sutures. If the funiculi are found too closely matted, the injection of warm normal saline or Ringer's solution—as has been described in Doctor Brown's paper—may be used. This undoubtedly tends to break up the finer adhesions. If the simple injection of such a fluid is not sufficient in itself to separate the adhesions, it is very doubtful if mechanical separation should be attempted, as more harm than good may result.

One wonders how much of the improvement is due to simply freeing external scar tissue, or external neurolysis, and how much is due to endoneurolysis. One can readily understand how relief of external pressure on a compressed nerve may be of lasting benefit. It is difficult to believe that even fine adhesions within the funiculi of the nerve would not reform after being freed.

It is a very difficult matter to determine the length of the waiting period between the time of injury and operation. Doctor Brown's shortest period was three weeks; his longest period eleven months. The average period would probably be somewhere in the neighborhood of three to four months. There can be little question as to the advisability of interfering if no improvement has occurred, or if the condition is getting worse after a reasonable waiting period. The cases which are hardest to decide are those where improvement is occurring. This is especially so if the improvement is very slow. In such cases one can never predict what the final result will be.

I was surprised to find what a large percentage of these cases present definite medico-legal aspects. Thirteen of the thirty-four cases were caused by cast pressure, splinting, bandaging, tourniquet, manipulation of joints or diathermy burns, amounting to 38.2 per cent. One cannot but feel that here, as elsewhere in medicine, prophylaxis is the best treatment. More caution, however, in the application of splints, casts, tourniquets, manipulation of joints and diathermy treatment should be emphasized.

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Doctor Brown (Closing).—Doctor Rockey has mentioned the factor of pain in partial lesions of peripheral nerves. We have encountered this on occasion, but in most instances in which pain has been a prominent feature the motor loss has not been of great degree. Relief of pain by neurolysis of the affected part of the nerve in some instances has been possible, but in the type described as causalgia, the result has often been disappointing.

The use of fat in the formation of a new bed for nerves has been advocated by many surgeons. We feel that the transplants of fat frequently are absorbed rapidly and do not give the protection that has been claimed for them. We always make an attempt to remove the nerve from an old scarred bed into adjacent muscle or subcutaneous tissues to prevent further constriction, in so far as possible.

TREATMENT OF TRICHOMONAS VAGINITIS*

By S. M. Gospe, M. D.
San Francisco

Discussion *by H. N. Shaw, M. D., Los Angeles; Henry A. Stephenson, M. D., San Francisco.*

THE treatment of the vaginitis associated with the trichomonas vaginalis (Donne) is as varied as any nonspecific method of therapy can be. To add another type of treatment which offers nothing new is inexcusable; on the other hand, a régime which offers quick symptomatic relief, and a good number of cures which can be ob-

* A report from the Woman's Clinic, Outpatient Department, University of California Hospital.

TABLE 1.—*Results of the First Follow-Up*

Period	Positive	Negative
1-2 weeks	2	21
3-4 weeks	5	10
5-6 weeks	2	2
7-8 weeks	0	2
9-10 weeks	0	3
11-16 weeks	1	2
17-30 weeks	1	2
31-50 weeks	0	1
	10	41

tained in a simple effective manner of administration, is worthy of consideration.

At the University of California Hospital, 4—carbamino phenyl arsonic acid (Carbarsone—Lilly),[1,2,3] had been shown to have a definite clinical value in the treatment of intestinal amebiasis. A clinical study was then undertaken to discover the effect of this protozoacide upon the trichomonas vaginalis, and upon the vaginitis associated with it.

MATERIALS AND METHODS

Vaginal suppositories containing 2 per cent carbarsone in a cocoa butter or boroglycerin base were used. Suppositories were inserted into the vagina after retiring, a course consisting of nightly treatment for two weeks. One bicarbonate of soda douche was allowed each week. In some cases two or three such courses were given without signs of local or general reaction.

Diagnoses were all made by the fresh smear diluted in Ringer's solution. Smears were taken at each visit to the clinic, varying from every two weeks during the first four to six weeks, then after each menstrual period for several months. Treatment was stopped after patient showed, clinically and microscopically, normal findings.

Fifty-one patients were seen at least twice; thirty-five of these were followed more satisfactorily. The first follow-up examination showed that forty-one (82.4 per cent) of the fifty-one patients returned with normal smears and clinical improvement.

These forty-one patients noted that the discharge decreased, and the tenderness in the vaginal canal either completely disappeared or was greatly relieved within the first week of treatment.

The patients who returned with a positive smear were given a second course of treatment. Eight of these returned for reëxamination. Five of these had smears devoid of trichomonas, increasing the ratio of improved patients to forty-six (90.2 per cent).

Five patients in this series were pregnant. Of these, two were completely relieved and three showed symptomatic relief while under treatment with recurrences soon after the treatment was stopped.

Fifty-two per cent of the patients who were followed closely remained free of symptoms and trichomonas during the entire period of observation (from two to eight months), while 11 per cent were entirely unaffected by the treatment. The remainder (37 per cent) had recurrences which responded to treatment. Some of these had recurrences of the vaginitis after treatment was suspended.

COMMENT

Our initial findings made us feel enthusiastic about the effect of the substance upon the trichomonas vaginalis vaginitis, but later follow-up studies showed a large number of recurrences which, it is true, were easily amenable to further treatment.

The favorable points in this method of treatment are:

1. It is a simple, painless, stainless method.
2. Eighty per cent of patients were relieved subjectively and objectively of the vaginitis after one course of treatment.
3. Recurrences are easily treated by repeated courses of therapy.

University of California Hospital.

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DISCUSSION

H. N. SHAW, M. D. (901 Pacific Mutual Building, Los Angeles).—There have been numerous articles in the recent literature on treatment of trichomonas vaginitis. Many of the methods are rather complicated, and cause an irritation more troublesome than the inflammation they are meant to cure. For this reason, Doctor Gospe's method should be extremely valuable. It apparently causes no discomfort, and can be used by the patients at home.

The question of recurrences is difficult, because the source of the original infection has not been definitely determined. Various theories have been advanced, the most probable being that the infection comes from the intestinal tract. If this be true, it would prove impossible to prevent reinfections, which in the ordinary follow-up would be classed as recurrences.

While our main object is to cure a disease, it should be done as economically as possible for the patient. The day of "pot-boiler" treatments is over. Doctor Gospe's method is particularly commendable because, by using the suppositories at home, the patient gets adequate treatment at a minimum cost.

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HENRY A. STEPHENSON, M. D. (490 Post Street, San Francisco).—The treatment of vaginitis, associated with trichomonas vaginalis, is a very live topic. The methods used in the past have not given uniformly satisfactory results, so that any new method should be welcome. We have had very little experience with the procedure outlined by Doctor Gospe. The results as reported by him seem so good that the method should be tried.

In our treatment in the past, we have had best results from using acetyl-amino-oxyphenol arsenic acid, as suggested by Gellhorn of St. Louis in 1933. The dosage is somewhat larger than that of carbarsone as employed by Doctor Gospe. Our success with this drug leads us to give our hearty approval to the use of some form of arsonic acid.

CHILD GUIDANCE AND MENTAL HYGIENE*

By Arthur R. Timme, M. D.
Los Angeles

Discussion *by Glenn Myers, M. D., Compton; Sydney Kinnear Smith, M. D., Oakland; Charles Lewis Allen, M. D., Los Angeles.*

TRUTHS have a tendency to reveal themselves when the time for them is ripe. Thus, accumulated knowledge and achievement made the radio and television almost predictable. So with the central idea of mental hygiene.

THE ORIGINS

Medically, we had reached an impasse in the deeper understanding of mental disease. Classification and description of the psychoses had attained their height of development. Kraepelin's work left nothing further to be desired on that score. The time was there for something more dynamic. Light began to come from several quarters—from Breuer and Freud, from Pavlov and Watson, from Healy's studies in delinquency, from Adolph Meyer's integration of some of the above ideas into his concept of the individual as a psychobiological unit. Then came the formation of the National Committee for Mental Hygiene. This was established primarily for the purpose of bettering conditions in public and private hospitals for the insane, and humanizing still further the treatment of these patients. But the challenge of even greater needs soon widened the scope of interest of this committee, and the following activities were added: the establishment of psychopathic hospitals for study and treatment of early acute mental conditions and for research and teaching; establishment of out-patient departments of state hospitals for follow-up care of paroled patients; revision or rewriting of laws dealing with the commitment of the insane; finding and organizing ways and means of prevention of mental disease; study and prevention of juvenile delinquency, culminating in the child-guidance clinic idea; revitalizing the teaching of psychiatry in medical schools, and organizing opportunities for postgraduate work in "extramural" psychiatry. The National Committee organized and obtained the financing of a five-year demonstration program of the child-guidance clinic idea. Demonstration clinics visited some of the larger cities for periods beginning at three months and increasing by demand to two years. Following these demonstrations, some of the communities established such clinics under the auspices of community chests, schools and universities or hospitals.

THE PHILOSOPHY

The nineteenth century witnessed tremendous advances in our knowledge of the human being, and his behavior in health and disease. The advances in physiology, cerebral localization, pathology and, finally, bacteriology, linked up function to structure ever more closely. When we saw the finer points of cerebral localization, the results of a lesion in Broca's area, the jocosity of the frontal lobe tumor, the fear-like excitement of the hyperthyroid, the grandiosity of the paretic and many other direct relationships between structure and behavior, it was not too great a strain upon our logic to assume that all deviations of behavior are due to changes in the physical organism. But we stood as helpless as ever before the increasing problem of mental disease. The light that came from the sources mentioned above revealed that behavior, both normal and abnormal, rested upon more than just structure and its pathological changes; the experiences of the individual are behavior determinants of prime importance. Medical science, including psychiatry, has a tendency to focus its attention upon the individual as a mechanism more or less apart from the environment. But this new philosophy regards him as inseparable from the milieu in which he lives; he reacts to stimuli coming from the environment, and in turn reacts upon the environment, modifying it at certain points. The environment, in the sense used here, includes all experiences the individual has been exposed to from the moment of birth on.

Furthermore, the concept of the totality of the individual is an important part of this new philosophy. He is a behaving unit; neurosis and psychosis are, in general, disturbances of his total behavior rather than of this or that part of his organism. Even the nervous system and its ally, the endocrine system, though they are more important integrating and correlating parts of the human machine, can be perfectly sound in their relation to the other organ-systems, *i. e.,* organically unaffected, and yet profound disturbances in the person's behavior may be apparent. Medical science has been too busy setting the machine, as such, in order, and has overlooked or lost sight of the driver or engineer.

Investigators of problems of disturbed behavior, whether crime, delinquency, psychosis, neurosis, or social inadequacy, found themselves on paths invariably leading in one direction—to childhood. It is in the early years that emotional habits and behavior patterns are formed, which lead to various degrees of successful adjustment later in life. Here then, in childhood, is the strategic point of attack in any preventive program. And so, the child-guidance clinic becomes an important part of the mental hygiene program.

The following behavior problems are samples of what are thought to be symptoms of disturbed adjustment and indicative of possible future mischief: tendency to seclusiveness and withdrawal from the group; persistent lying and stealing; persistent running away and truancy; overdependency on parents; unaccountable fears; various habits, like nail-biting and thumb-sucking; persistent play for attention; marked distractibility and restlessness; marked stubbornness and defiance; and many others. It must be borne in mind that a behavior problem presupposes two entities—the behavior and the person to whom it is a problem. Sometimes the fault lies with the

* Read before the Neuropsychiatry Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

second, as, for instance, some parents are annoyed by and complain of thoroughly average normal behavior. That attitude in itself constitutes a problem and needs attention.

THE METHOD

The "child-guidance clinic" represents an attempt to arrive at a comprehensive understanding of the child who is beginning to show maladjustment. It is a group enterprise, and consists of a four-fold approach to the problem. Although the child is a behavior unit, it is true, the facts elicited in the study seem to fall into four categories: (1) the social or environmental or experiential; (2) the physical; (3) the intellectual and educational; and (4) the emotional. These facts are gathered by four workers in their respective fields—the social worker, the psychologist, the pediatrician, and the psychiatrist. The social history includes a complete personal, family and school history, and covers as many of the child's experiences as are possible to obtain. Of great importance are the parent-child and other intra-family relationships, the health history, relationships to other children, etc. The physical examination seeks to bring out not only the presence or absence of disease or defect, but attempts to appraise the physical equipment with which the child is to face life, *e. g.,* comparative strength, size, agility, coördination, appearance, etc. The psychological examination not only measures the child's intelligence, but determines the type of intelligence, special aptitudes, emotional interferences with the free functioning of intelligence, school achievement, etc. The psychiatric examination is an attempt to look at the world through the child's eyes; here we elicit his attitudes to parents, siblings, schoolmates, playmates, to authority, to himself; his fears, hopes and guilts; his progress on the road to maturity.

The findings are then correlated in a conference of the various examiners, and a treatment plan formulated. It is endeavored to make this as comprehensive as the examinations. Thus, physical defects, endocrine disorders, malnutrition, etc., are treated. Indicated school readjustments or grade placements are made. Outlets for unabsorbed energy and interest are obtained where possible. Frequently, the chief point of attack centers on the parent-child and family relationships. Attitudes of parents, methods of discipline, etc., often need changing. Emotional fixations, for example, of mother on son, may be causing mischief. Many other subtle, intangible factors in relationships are at fault and need treatment. This is where the well-trained psychiatric social worker is of service. Not only does she obtain the experiential data mentioned above, and thus contribute to the diagnosis, but she is indispensable in treatment. Her training enables her to deal with these family relationship factors, besides being useful in effecting other adjustments, perhaps in the school, perhaps in securing play or work outlets where needed, etc. She is the extension of the psychiatrist into the home, the school, and the community. In fact, the treatment indicated is usually not of the child, but of the situation in which he finds himself—the home, the school, the neighborhood, etc. Thus, the Clinic's community contacts are continually widening, and we find ourselves in touch with the school, the playground, the church, the probation department, etc.

But the preventive program of mental hygiene embraces more than child-guidance clinics. An important part is the mental hygiene consultation service in colleges and universities. This is another stategic point of attack. If this whole theory is sound, then much good can be accomplished by helping to solve the emotional problems of the young men and women who are to be our leaders, and thus freeing them for more efficient functioning.

COMMENTS

It is a far cry from the former static, descriptive psychiatric examination to the modern dynamic, interpretative study. It is interesting to know if a patient is oriented as to time, place and person, and whether he has delusions, hallucinations, echolalia, euphoria, coprophilia, or what not. But it is more helpful to know something of his attitudes to himself and others, how he faces difficulties, how grown-up he is, what emotional "thorns in his side" he may have. It is true that knowledge of this type of fact may not solve the present problem—we still stand as helpless as ever before the full-blown psychosis. But facts of this nature may help us work out a program for him when he returns to the community from the state hospital. Knowledge of such relationships may enable us to alter the experiences of the child, so that his accumulated reaction patterns will mean healthy rather than unhealthy behavior. If this reasoning is sound, then we may say that psychiatry has kept abreast of other departments of medicine, because it has instituted a truly preventive program, and the greatest advances in medicine of the past few decades have been on the preventive side.

The surface has merely been scratched. Many problems still stand in the way of further progress. The influence on behavior of the primitive integrating mechanism is yet to be elucidated; I refer to the endocrines, vegetative nervous system and basal gray matter—thalamus, epithalamus, and hypothalamus. As to the exact rôle these structures play in determining behavior, we are still in the dark. We find pathology of these structures in many instances of behavior pathology, but we also find them normal to present methods of investigation in just as many and more other behavior disturbances. The relationship may be a link-in-the-chain affair, or it may be reciprocal. Cannon and Crile have shown, for instance, that emotional experience can produce actual structural change.

Does this elaborate preventive program prevent? Of course, only the future will tell. Evaluation is extremely difficult. We are dealing with

quantities that are vital, changing and fluid—with life processes—immensurables and imponderables. Even medical and surgical results are sometimes difficult to measure; behavior and adjustment far more so. What attempts at measurement have been made have been with relatively advanced cases like delinquents and criminals, and these have not been encouraging. But no one expects to cure these things. We don't even know that relatively simple behavior problems of children lead to neurosis, psychosis, and crime. But we believe that the roots of these extend into childhood, and providing a healthy development for the child should insure a healthy adjustment in later years. This "providing a healthy development for the child" is a big order, for it means control of all his experiences, and information of all the persons touching upon his life. Hence, the educational part of the mental hygiene program, which cannot be touched upon here for reasons of time.

As yet, the clinical study of a behavior problem is an expensive and unwieldy procedure. Only few cases can be studied directly, and the field can by no means be covered. There is also a great shortage of trained personnel. The work of child-guidance clinics must be regarded largely as information gathering. But as knowledge based on experience accumulates, it seems that the time per case can be materially shortened.

The mental hygiene view, that man is more than a machine, complex and glorified though that machine may be, indicates a great need in medical education. That is a need for a more thorough grounding in psychology. The doctor needs to know more of human behavior, of the behavior of the total individual, and the causes behind it. As said before, setting the machine in perfect order does not necessarily insure perfect behavior. A mechanically perfect automobile, if entrusted to a poor driver, runs a chance of poor performance, and even damage, in heavy traffic. A persistently poor driver can ruin any car. A good driver frequently gets by with a poor car. The point is that the doctor should know something of what is behind the functioning of the human machine. This is necessary, not only as regards mental disease, but even for a better understanding of physical disease. And so, an adequate type of medical psychology should go along with the teaching of physiology. This would lead not only to better psychiatry, but to better practice of the whole of medicine.

CONCLUSION

The mental hygiene view-point has resulted from the realization that human behavior has many determinants, not the least of which are the experiences of the individual. Control of these experiences can in some measure influence behavior. This is true as regards both so-called normal behavior and its deviations. A preventive program has been built up, which seeks to enter the life of the individual as early as possible, when experiences are in the making. The hope is to start the momentum of growth and development in the direction of a healthy adjustment.

1930 Wilshire Boulevard.

DISCUSSION

Glenn Myers, M. D. (Compton Sanitarium, Compton).—Doctor Timme has said, "We still stand as helpless as ever before the full-blown psychosis." I think he does not mean exactly that, but, rather, that our prevention or control of the full-blown psychosis is far more difficult than our prevention or control of the lesser deviations from the normal mentality, such as the behavior deviations of childhood. We have made progress in both the prevention and control of the psychoses. We have better understanding of psychotic mechanisms than we had when the Kraepelinian concepts represented the height of such attainment. With better understanding, we are more successful in preventing the development of the psychoses and, through "treatment interviews," in shortening their course once they have become full-blown.

Such success as we have with the psychoses depends essentially upon the progress made in the understanding of the behavior patterns of childhood. As has been repeatedly stated, childhood is the golden period for the building of normal patterns and the elimination of undesirable patterns of behavior. Meyer has said that the means of understanding mental make-up is not to be found through study of a cross-section, but a longitudinal section of the patient's life. We see in our adult patients a picture of the progress of undesirable behavior patterns of childhood into psychotic reactions of adult life. We largely understand the picture that we see, but deal with a product that is no longer in process of development; it is finished and set. After the psychotic symptoms have subsided, we can do much in treatment, but are limited in accomplishment by the relative inflexibility of the adult. Could we have had our adult psychotics when they were children, we should in most instances have prevented the eventual development of psychosis.

Doctor Timme properly calls attention to the fact that an individual cannot be separated from his environment, in a study of his adaptations and failure of adaptations to the world. Environment moulds the individual, and to some extent the individual his environment. In a psychosis, then, we must not only study a longitudinal section of the patient's personality make-up, but the external situation—longitudinal sections of his environmental influences.

The child-guidance clinics have been performing a great service. They operate on the principle that it is better to make an exhaustive study of a few children than to have a smattering of information about a great many children. Such study at the same time entails treatment. They thus perform a maximum service for a limited number of children, and acquire maximum information of value in the understanding of all persons of all ages. We should still be classifying psychotic patients by the Kraepelinian rules, like a specimen in botany, had it not been for our better understanding of mental disorder through the Freudian concepts, and through the special studies of children. We no longer pay so much attention to diagnosis, but attempt to understand the total individual in relation to his total environment. When that understanding is fairly complete, we oftentimes find that classification of types of disorder involves consideration of several diagnoses; perhaps without the picture fitting a combination of two or three, but requiring an additional explanatory note.

With the education brought through study of greater numbers of children along the lines of the child-guidance clinic principles, we should hope in time appreciably to decrease the total number of psy-

chotic adults. Certainly it is far better to spend effort and money toward prevention of mental disorder, by increasing the numbers of children with normal mental patterns, than by providing more and more hospital beds for psychotic adults.

❊

Sydney Kinnear Smith, M. D. (230 Grand Avenue, Oakland).—Doctor Timme's paper is an extremely clear presentation of the problem and philosophy of child guidance. Probably the most pregnant thing in it is the question, "Does this elaborate program prevent?"

As he points out, these clinics are an excellent source of information from a relatively few cases, and in time something worth while may be known. I would feel that this is exactly where the child-guidance clinics have fallen down, and why child-guidance as such is psychiatrically coming to be a back number. The term "child-guidance," once so carefully chosen, is misleading, and is being abandoned. One hears relatively little of the "Child Guidance Movement" in the sense that we did five or ten years ago. The program of the American Psychiatric Association of a few weeks ago omitted it, and in talking to many of the leaders in psychiatry at this convention, the writer has come to the conclusion that, while no one minimizes the importance of mental hygiene work in the early years, yet the effort of the future should be along more natural lines; that is, the use of clinics for children in connection with hospitals, schools, etc., rather than setting up *de novo,* child-guidance clinics.

The social workers in the communities where such clinics have been established have looked with too much eagerness to these centers where they assumed that there would be a magic solution for their problem children. Unfortunately, these clinics elaborated beautiful histories, and had interesting staff conferences, but apparently little more than this ever happened.

Several years ago Dr. Adelaide Brown had temerity enough to state this same belief at a conference on child-guidance before the California Conference of Social Agencies. Then many of us who were closely associated with child-guidance programs resented this lady's views, but as time has gone on I believe that we are coming to the point of view expressed by Doctor Brown.

In brief, we need more places to study more problems of childhood in a less spectacular and a more practical way.

❊

Charles Lewis Allen, M. D. (214 South Lafayette Park Place, Los Angeles).—Mental hygiene has long been practiced, but to Clifford Beers is due a movement toward it which has spread around the world. It is logical that one of its most important divisions should deal with the child, since at this time of life the chances of preventing later neuroses and psychoses, as well as social inadequacy and criminality, are greatest.

The term "child-guidance" is perhaps not quite happy, since frequently parents, teachers, and officials need such guidance, rather than the child.

While the mental hygiene movement has already justified itself, its full possibilities are not yet determined. It is quite evident, however, that its success or failure in a community will much depend upon the intelligence and tact with which it is introduced. If its managers start out by antagonizing or ignoring influential people to whom it should properly appeal, it is not likely to take with the majority of the people.

In the heyday of our prosperity a few years ago, money for this work seemed available *ad libidum,* and undoubtedly much was wasted in useless projects carried on at a maximum expense.

That it must now be conducted more economically need not destroy what has been gained nor seriously impair its real usefulness, although some personal sacrifice on the part of those in the work may be required.

Since mental hygiene is based primarily upon neuropsychiatry, a branch of medicine, directors of its practical work must be physicians with special training and experience in this discipline, who must also know medical psychology and be able to carry out intelligence tests, etc. Medical assistance, too, will be required in a large clinic, as a paid staff.

It is most important, also, that the general practitioner ("the family doctor") should be included in the scheme. He first comes into contact with those who should be reached, and is in a position to obtain facts of prime importance in the family and personal history of the patient.

Let the advantage, both to him and to his patients, of mental hygiene be demonstrated, and he will be found willing to donate some of his time to its work, as he has long done, in the case of public health. He could even be trained to render voluntary, but useful assistance at the clinic, especially in a small community. This point is emphasized since there has been a tendency upon the part of some of its lay supporters to belittle the importance of the doctor in mental hygiene.

A prime factor in this work is the social worker with psychiatric training, without whom information as to family history, environment, etc., essential to proper diagnosis and treatment, can hardly be secured.

That mental hygiene can contribute much to the mental health and good order of the community cannot be gainsaid. One of its chief values is in the court, but here the idea must be "sold" to the judges, many of whom it seems difficult to convince of its utility. The school authorities are in general favorably disposed, as are most of the societies having the care of children, and the law agents having to handle them.

Now that the movement has establishments in most large cities, it is time to push on into the smaller ones, so that ultimately every well-settled community may be provided with such aid as mental hygiene can give.

COMPULSORY HEALTH INSURANCE*

By Frederick L. Hoffman, LL.D.
Philadelphia, Pa.

VI

MEDICAL benefit, under compulsory health insurance, includes the free administration of drugs and essential medical appliances. It thus involves government control of the pharmaceutical profession, just as it does control the medical profession. Previous to compulsory health insurance in England, it was the practice of most of the general practitioners to compound their own medicines; but this has been done away with, and all prescriptions must be compounded by authorized pharmacists under a multitude of rules and regulations not easily comprehended by anyone not familiar with the details of the British pharmaceutical practice. Under the original act, a flat provision of two shillings per insured person was made for the cost of drugs and appli-

* One of a series of articles on compulsory health insurance, written for California and Western Medicine by the well-known consulting statistician, Frederick L. Hoffman, LL.D. Articles in this series were printed in previous issues, as follows: I, in April, page 245; II, in May, page 361; III, in June, page 411; IV, in July, page 33; V, in August, page 114.

ances; but since then the cost has been reduced to one shilling six pence in actual experience, the remainder being diverted to prescribing doctors.

DRUG-PRICING BUREAUS

The act had not been long in operation when it was realized that definite measures of control had to be extended to the prescribing powers of the doctors, to reduce the price of prescriptions and the cost of drugs to an economic basis consistent with adequate treatment. Likewise the control had to be extended to the pharmacists, as regards prices charged for particular drugs and appliances; and before long a drug tariff was established setting a definite price for each drug and appliance, uniform as far as I know throughout England, but different for Scotland and possibly for Wales. Drug-pricing bureaus came into existence, and to these were transferred in due course all the prescriptions filled by authorized druggists for reëxamination both as to quantity prescribed, also frequency in repeating orders, and the economic use of low priced drugs in place of high priced drugs whenever feasible. A difficulty, however, soon arose as to the prescribing of proprietary medicines, which were frowned upon as more costly than so-called stock mixtures. According to a statement appended to the report of the Drug Accounts Committee for Scotland, 1930, out of a total of 202,943 prescribed forms issued, only 3,062 related to proprietary medicines.

I quote the following from the Drug Tariff for National Health Insurance, 1931, with reference to proprietary preparations:

> Where a proprietary preparation is required by the prescription to be supplied without dilution or admixture, and is available only in packages of definite sizes, a chemist may, if the preparation does not come within the scope of the Dangerous Drugs Regulations, supply the size approximating most closely to the quantity of preparation prescribed where this quantity does not correspond exactly to the quantity contained in a package. Payment for quantities of proprietary preparations other than those prescribed will be made only where the chemist forwards to the Pricing Office, with the appropriate prescription form, particulars of the quantity supplied.

I also quote from the *Lancet* of March 24, 1934, the following illuminating extract with reference to favorite prescriptions:

> Every practitioner has his own ideas of what medicines are suitable for what maladies, dependent no doubt both on his own experience and on what he was taught at his medical school. It would be interesting to know what are the commonest prescriptions in London. This varies with the time of year, but the pricing bureau says quite definitely that Mist. Ammon. Chlor. Co. is the commonest of all: eight ounces of this cost 1.1d. with dispensing fee of 5d. The next most common medicine is Mist. Sod. Salicyl., costing 1.8d. for eight ounces with dispensing fee of 5d. Other common prescriptions are Mist. Expect., Mist. Tuss., together with the gentian mixtures for tonics. Apparently Mist. Alba is out of fashion and hardly ever ordered.

STOCK MIXTURES

The Pricing Bureau, however, has published a wealth of data on British pharmaceutical practices suggestive of the conclusion that stock mixtures are relied upon to a large extent instead of individual prescriptions, revealing a thorough knowledge of drugs in their application to particular diseases. Obviously, stock mixtures are most easily dispensed in the hasty examination of patients suffering mostly from trivial ills and satisfied with a bottle of medicine, whatever it may contain. Referring to a recent address by Mr. A. B. Gilmour, superintendent of the Glasgow pricing bureau, the *Lancet,* after calling attention to the fact that the bureau employs fifty persons in the scrutiny and pricing of every insurance prescription in Scotland and Northern Ireland, states that last year it dealt with 3,700,000 prescriptions; and since it started, it has handled 45,000,000 prescriptions, which have cost two and a half million pounds. Difficulties are pointed out resulting from obscure handwriting and mistakes, it being said that,

> The following mistakes recur: Lin. Methyl. Sap. for Lin. Methyl. Sal.; Lin. Sinapis for Lin. Saponis; Lysol for Lugol's solution. There is the daily difficulty of deciding whether Atophan or Alophen is intended, Calomel or Calamine, Sod. Br. or Sod. Bic., Syr. Aurant, or Syr. Aromat.

ILLEGIBLE WRITING

Mr. Gilmour is quoted as having expressed the opinion that illegible writing should be made a punishable offense under the Act, just as this is the case in Norway; and that insured persons are entitled to proper and sufficient medicines and prescribed appliances. The Act quotes the following illustrations of extravagance in prescribing, subject, of course, to a reprimand or prosecution of the offending physician as the case may be.

> One and a half drachms Liq. Strychn. with Syr. Aurant. eight ounces. Direction: One dessert spoonful three times a day—in this case it cost 2.8d. to flavor and sweeten one pennyworth of a solution of strychnin.
>
> One dozen each of aspirin tablets, phenacetin tablets, and Quin Sulph. tablets. Direction: One of each kind as directed. As there are three different lots of tablets, 3 x 7½d. dispensing fees are allowed. If one dozen aspirin, phenacetin, and quinin powders had been ordered, the dispensing fee would have been 5d.
>
> Cantharidin plaster, four pieces two inches square, ten pieces one inch square. As there were fourteen separate pieces of plaster, 14 x 5d. dispensing fees had to be allowed. If the plaster had been prescribed in one piece, the dispensing fee would have been 5d. instead of 5s. 10d.

An investigation of 140,000 actual prescriptions showed that they fell into the following classes:

	Per Cent
Mixtures	56.8
Weighed powders	10.8
Ointments and pastes	7.2
Lotions	4.8
Liniments	3.69
Pills	2.37
Paints	1.66
Tablets	1.37
Gargles	0.82

This confirms the statement previously made that most of the prescriptions are in the nature of stock mixtures, kept in bulk and permitting of prompt delivery. As regards drugs most commonly prescribed, I will give the first six in the list of twenty: 1, Sod. Bicarb.; 2, Tinct. Nucis. Vom.; 3, Ammon. Carb.; 4, Vin. Ipecac; 5, Spir. Chloroform; 6, Glycerin.

According to an investigation of 118,000 prescriptions, one ingredient was used in 22.03 per cent, two ingredients in 16.66 per cent, three ingredients in 20.88 per cent, four ingredients in 23.14 per cent, five ingredients in 13.01 per cent, the remaining 4.28 per cent having from six to nine ingredients.

According to the annual report of the Drug Accounts Committee for Scotland for 1930, during the years 1916-1929 the number of proprietary ingredients disallowed were 20,713; the number of prescription forms disallowed, 41,713; the stock order items disallowed, 18,100; the unsigned prescription forms rejected, 23,184; the number of postponed items on prescription forms, 82,501; the whole making a total of 186,211, or a ratio of irregularities to prescription forms of 56 per cent.

PRICE-CHECKING ON PRESCRIPTIONS

As I have said before, it is difficult to convey a thoroughly intelligent idea of the complexities of the British pharmaceutical practice under national health insurance, but I add to the foregoing a note on price-checking, as given in a small treatise on Pharmaceutical Insurance Service by William Shaw, of the St. Helens Insurance Committee:

> To protect the interests of chemists as to the correct pricing of insurance prescriptions, reasonable facilities are permitted for examining by responsible persons all or any of the insurance prescriptions on which the drugs or appliances supplied by chemists were ordered, together with particulars of the amounts calculated by the Pricing Committee to be payable in respect of such drugs and appliances. Should objection be taken thereto by the responsible persons concerned, the Insurance Committee is required to take such objections into consideration. Similar concessions are available to the Pharmaceutical Committee, but the general practice is for arrangements being made by such committee on behalf of chemists for the Retail Pharmacists' Union to undertake the work.

The vast pharmaceutical practice under compulsory health insurance has resulted in the standardizing of pharmaceutical procedure to a remarkable degree. According to the report of the Ministry of Health for 1932, for example, "There was an increase of over 2 per cent in the number of insurance prescriptions dispensed in 1932 as compared with 1931, the numbers rising from 54,918,738 to 56,081,507; and the average number of prescriptions issued per insured person entitled to supplies increased from 4.17 to 4.19." The average cost of ingredients per prescription increased from 3.488d. in 1931 to 3.594d. in 1932; while the average total cost of drugs and prescribed appliances, per insured person entitled to obtain them from chemists, increased from 2s. 9d. in 1931 to 2s. 9½d. in 1932.

EXCESSIVE PRESCRIBING

The chief difficulty, from the physician's point of view, is the danger of excessive prescribing, resulting in prosecution and penalty. It is said in this connection in the Annual Report of the Ministry of Health for 1932 that,

> Regional Medical Officers paid 954 visits in 1932, as compared with 1,240 visits in 1931, to doctors whose prescribing appeared to call for explanation; and, in this year as in previous years, except in a small number of cases, this exchange of view enabled the Minister either to accept the explanations tendered by the doctors, or to satisfy himself that minor departures from a reasonable standard of prescribing would not recur.

And furthermore with reference to the definition of drugs for the purpose of medical benefits, it is stated that,

> Reference was made in last year's report to the findings of Panel Committees in five cases which had given rise to questions calling for decisions by referees as to whether certain substances or articles supplied by chemists on the orders of insurance doctors were drugs or appliances forming part of medical benefit. During the year, the decisions of referees on these questions were received. In four cases they decided that the substances or articles ordered were not drugs or appliances forming part of medical benefit. In the remaining case, the referees were satisfied that the substance ordered was a drug forming part of medical benefit.

The question here is conflict of opinion as to whether a drug also constitutes a food as, for example, in the case of cod-liver oil, which may be prescribed for nutritional benefit as readily as for medical necessity in the case of say, anemia or tuberculosis. But, as I have said before, in actual practice conflicts with the Government have been few, although the risk of this conflict is an ever-present one, and in no direction more so than that of overprescribing, imposing upon the attending physician a heavy burden of responsibility. The economic aspects of the Act involve reactions that have nothing to do with the improvement of medical practice or the cure of the patient. Under given conditions, they seriously impair the functions of the general practitioner exposed to the ever-present possibility of a variety of prosecutions.

STANDARDIZED PRACTICE

Medical practice and pharmaceutical practice are inextricably interwoven with economics, and subject at every turn to state regulations and state control. In actual practice, however, there has been much less friction than was anticipated, due to the wholehearted coöperation of the medical and pharmaceutical professions entering into the undertaking and aiming at a successful solution. But the old spirit of freedom is gone, and a standardized practice has come into being which cannot be said to advance therapeutics or make for such advances in the future. The habit of prescribing stock mixtures continues while proprietary medicines are used no more than is absolutely necessary in view of the higher prices involved, regardless of their value or convenience. Thus American pharmacists may well consider the vexations that are in store for them in the event compulsory health insurance is adopted by American states. They would do well to make common cause with the American medical profession opposed to the introduction of health insurance as uncalled for by the needs of the patients and the profession, in the light of the experience that has been had abroad.

(To be continued)

THE LURE OF MEDICAL HISTORY*

THE TUBERCULOSIS MOVEMENT IN CALIFORNIA†

By W. P. Shepard, M. D.
San Francisco

II‡

II. SOME 1934 LIABILITIES

LEST we commit the sin of complacency, let us hurry on to a contemplation of our liabilities. Despite the fact that we have written off many liabilities in the past, there are still those remaining which we must declare.

COMPARATIVE DEATH RATES

Table 1 presents average death rates from all forms of tuberculosis in the registration area, in California, and in our neighboring states. It shows, in the last column, the percentage of reduction of death rates in each area since 1900. It will be seen from this table that in the period 1900 to 1909, inclusive, California had a tuberculosis death rate of 224.7 per 100,000, as compared with 185.8 in the registration area. In other words, the California death rate was 21 per cent higher than that of the registration area. In the period from 1910 to 1919, inclusive, the California death rate was 29 per cent higher than in the registration area. In the period 1920 to 1929, inclusive, the California death rate was 47 per cent higher than in the registration area. Over these entire thirty years the death rate from tuberculosis in the registration area has declined 51.4 per cent. In California it has declined 40.9 per cent. The burden of immigration of the tuberculous grows heavy indeed when we examine death rates in California, Arizona, New Mexico, and Colorado. We must face the fact, however, that this and other factors have operated to reduce the tuberculosis death rate less in our state than in the registration area. Assuredly, our job is far from done in California. Each ten-year period in the past thirty years we have fallen farther and farther behind the rate of reduction in the nation as a whole.

Table 1.—*Tuberculosis Death Rate Per 100,000 Population*

	Average 1900-1909	Average 1910-1919	Average 1920-1929	% of Reduction
Registration area	185.8	147.5	90.2	51.4
California	224.7[1]	190.0	132.6	40.9
Arizona	.....	.....	345.7[4]	.....
New Mexico	.....	.....	203.5[5]	.....
Colorado	257.6[7]	203.3[3]	165.7	35.7
Oregon	.....	89.3	67.0	25.0
Washington	106.2[2]	102.6	76.8	27.7
Idaho	.....	.....	42.3[6]	.....
Montana	.....	103.3	70.4	31.8
Utah	.....	46.7	35.2	24.6

[1] 1906-1909.
[2] 1908-1909
[3] 1918-1919.
[4] 1926-1929.
[5] 1929.
[6] 1922-1929.
[7] 1906-1909.

COMPARATIVE SEAL SALES

To be sure, many factors contribute to this state of affairs. It is difficult to appraise them in order of importance, and no such attempt will be made. Without doubt, one of the factors is a peculiar variation in the success of the seal sale in various parts of the state. This in turn must reflect considerable variation in the effectiveness of the local antituberculosis program. Table 2 was kindly prepared by Mr. Higby. It presents the per capita seal sale by local associations for the year 1932, together with the percentage of change in the per capita amount since 1929. It will be noted that some local associations have suffered more than others from the depression. But, more important than this, there is a great variation in the amount of money collected. Thus, we find the highest amount, collected in 1932, was 14.2 cents per capita in Santa Barbara. Next comes Pasadena with 13.5 cents per capita; this is followed by Turlock with 11.1 cents per capita; then comes South Pasadena with 11.0 cents per capita; then, Susanville and Orange County with 6.6 cents per capita, closely followed by Long Beach with 6.3 and Alameda County with 6.0 cents per capita. At the other end of the list, we find local associations collecting as little as .39 cents per capita, as in Merced County; .79 cents in Monterey County; 1.2 cents in Needles Township, and a number of counties collecting only 1.3 cents per capita. Even taking into account variations in per capita wealth in various sections of the state, it would seem that measures used successfully in Santa Barbara, Pasadena, Alameda County, etc., might be studied with more care with a view to their successful application in other localities. Collection of funds is here referred to merely as an index of the amount of public support which the antituberculosis movement has been able to attract in various localities of the state. In passing, it may be mentioned as an item of historical interest that when the plan of a Christmas seal was first agitated in the United States, and before the national Association's seals came into general use, the Los Angeles Society for the Study and Prevention of Tuberculosis printed two seals, one-half the net proceeds of the sale therefrom going to the Los Angeles society and the other half to the California association. Both seals were designed by a medical man, Dr. George H. Kress of Los Angeles.

* A Twenty-Five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of California and Western Medicine. The column is one of the regular features of the Miscellany Department of California and Western Medicine, and its page number will be found in the front cover index.

† From the division of the Pacific Coast Welfare Division, Metropolitan Life Insurance Company, San Francisco.

† Presented at the annual meeting of the California Tuberculosis Association at Fresno, April 6, 1934.

‡Part I of this paper was printed in August issue, California and Western Medicine, page 118.

Table 2.—California Seal Sale in Cents Per Capita, 1932, With Per Cent of Change Since 1929

Local Association	1932 Sale	% of Change	Local Association	1932 Sale	% of Change
Alameda County	6.0c	−35	San Benito County	1.4c	−36
Amador County	2.3c	+28	Needles (Township)	1.2c	−52
Butte County	2.3c	−8	Redlands (Township)	3.4c	−26
Chico (Township)	1.8c	−59	Upland (Township)	2.3c	−12
Colusa County	5.2c	−37	San Bernardino County	2.1c	+62
Contra Costa County	3.2c	−52	San Diego County	5.2c	−34
Fresno County	1.4c	−86	San Francisco County	4.0c	−38
Humboldt County	2.4c	−48	San Joaquin County	1.4c	−36
Imperial County	1.4c	−13	Atascadero (Township)	3.3c	−33
Kern County	1.3c	+983	San Luis Obispo (Township)	3.7c	−37
Kings County	1.8c	+6	San Mateo County (Including South San Francisco)	4.2c	−39
Susanville (City)	6.6c	−31	Santa Barbara (City)	14.2c	−36
Long Beach (City)	6.3c	−40	Santa Maria (Township and City of Lompoc)	1.9c	−37
Los Angeles (City)	3.1c	−45	Santa Clara County	4.8c	−20
Los Angeles County	2.7c	−29	Santa Cruz (Township)	2.5c	−26
Pasadena (City)	13.5c	−20	Shasta County	4.6c	−39
South Pasadena (City)	11.0c	−23	Siskiyou County	1.5c	+36
Madera County	1.7c	−45	Solano County	2.6c	−21
Marin County	5.2c	+68	Vallejo (Township)	2.5c	.....
Mendocino County	3.6c	−23	Sonoma County	1.7c	−26
Merced County	.39c	−88	Stanislaus County	2.0c	−13
Monterey County	.79c	−53	Turlock (City)	11.1c	−38
Napa County	1.3c	−24	Sutter County	2.0c	−56
Grass Valley (Township)	2.7c	+125	Tehama County	5.6c	−40
Nevada City (Township)	1.8c	+50	Tulare County	2.1c	−43
Orange County	6.6c	−37	Ventura County	3.3c	−55
Placer County	1.7c	−32	Yolo County	2.9c	−29
Riverside County	3.8c	−33	Yuba County	3.5c	−15
Sacramento County	4.2c	−19			

UNORGANIZED TERRITORY

Another factor which may contribute to this condition is the fact that there is still considerable territory in this state which is either entirely unorganized, or inadequately organized to pursue a worthwhile antituberculosis program. According to the standards of the National Tuberculosis Association, there are twenty-eight counties in this state having a population of 35,000 or more which should be able to support full-time paid workers in their antituberculosis programs.

Marked improvement has been made in local organization during the past three years, thanks largely to the encouragement and initiative of the State Tuberculosis Association and its executive secretary. Three years ago there were twenty-three local associations or committees, not primarily devoted to tuberculosis control, but constituting, rather, subcommittees of other organizations. During the past three years, the tuberculosis associations of seven counties have been reorganized with representative boards of directors.

TERRITORY UNSERVED BY SANATORIA

State subsidized hospitals are standardized under the Bureau of Tuberculosis of the California State Board of Health (another major recommendation made by the California Tuberculosis Commission and brought into being largely through its influence). Almost from the beginning, the State Bureau of Tuberculosis has had as its director, Mrs. Edythe Tate Thompson, and the work of standardization has been carried on under her supervision. Twenty-four counties of California are subsidized. These are the counties which have the largest population and the largest wealth. But there are twenty-five counties with a total population of 576,000 where there is inadequate or no provision for sufferers from tuberculosis. Provision to serve this population is an imperative need in California. It is to be hoped that arrangements can be made by these counties to share in the support of and privilege of using their nearest county sanatoria.

REPORTING OF TUBERCULOSIS CASES

We have seen that medical leadership and guidance have provided the stimulus through which the antituberculosis movement originated and continued. That this has been appreciated in full measure, both by the balance of the medical profession and by the public, needs no argument. We

TABLE 3.—*Improvement in Reporting of Tuberculosis in California 1913-1932*

Year	Cases	Deaths	Ratio Reported Cases Per Death	Year	Cases	Deaths	Ratio Reported Cases Per Death
1913	2,573	5,402	.476	1923	8,485	5,724	1.482
1914	5,685	5,320	1.068	1924	9,663	6,023	1.604
1915	6,213	5,551	1.119	1925	9,701	5,896	1.645
1916	6,942	5,267	1.318	1926	9,917	5,794	1.711
1917	6,997	5,457	1.282	1927	10,149	5,960	1.703
1918	7,471	5,888	1.269	1928	10,816	6,073	1.781
1919	8,861	5,678	1.560	1929	10,622	5,855	1.814
1920	8,523	5,397	1.579	1930	11,296	5.629	2.007
1921	7,945	5,427	1.464	1931	10,781	5,292	2.039
1922	8,208	5,847	1.404	1932	10,878	5,027	2.163

now come, however, to a liability in our tuberculosis-control program which is largely in the hands of physicians. Apparently, we shall have to ask Olympus for even greater blessings than those already bestowed.

The reporting of communicable diseases or, in fact, any disease in which public control measures are justified, is a *sine qua non* in public health. Reporting of tuberculosis was recognized to be of major importance by our medical leaders in this state nearly forty years ago!

In 1905 the Committee on Tuberculosis of the Medical Society of California, composed of Drs. F. M. Pottenger, John D. King, George L. Cole, Edward von Adelung, and George H. Evans, urged state-wide notification of tuberculosis in the following terms:

"The Committee on Tuberculosis of the Medical Society of the State of California believes the following represents the most advanced thought upon the subject of notification in pulmonary tuberculosis:

"1. Tuberculosis is a disease communicated from one individual to another because of the violation of simple rules of hygiene and sanitation through either ignorance or willfulness, usually the former.

"2. In order to wage an effective warfare against this disease, the individual suffering from tuberculosis must know that he has the disease, must be instructed as to its nature and as to what measures are necessary to prevent its spread, and must carry them out with care. . . .

"3. The supervision of such measures rightfully belongs to the department of health, and in order for this department to have such supervision, it must be able to locate those suffering from the disease, which can only come about by requiring all cases to be reported."

Yet, at that time there were fewer reported cases than deaths from tuberculosis. Indeed, even by 1913, as shown by the following table, there was but one case reported for every two deaths.

Table 3, however, shows an interesting improvement in this regard. The ratio of cases reported per death has increased gradually but steadily, until in 1932 there were reported in this state 2.163 cases per death. At the time of the Framingham studies, it was estimated that there actually exist approximately nine cases for each death.

Let us see how we compare with other states in this regard.

Table 4 presents comparative figures for certain states. Of the states listed, it will be seen that Minnesota leads, with a ratio of 2.830 cases reported per death. New York City comes second, with a ratio of 2.505; then Massachusetts with a ratio of 2.204, and next, California with 2.163. We are slightly better than New York State for the year 1932, and considerably better than Washington, Oregon, Montana, and Utah. The highest reporting ratio listed by the National Tuberculosis Association in 1933 was in Buffalo with 4.18 cases reported per death. In 1932 Hawaii showed a reporting ratio of 2.94; Michigan, 2.88; then Minnesota. The average for all states was 1.63.

We now come to an interesting variation in the degree of reporting of tuberculosis cases in the various localities of this state. This is presented in Table 5, figures for which were obtained from the State Board of Health. The death reports are crude totals and the table must, therefore, be interpreted in that light. Thus, counties with tuberculosis sanatoria and large general hospitals caring for the patients of other counties will have a higher death ratio, but likewise, presumably, a higher reporting ratio. It should also be borne in mind that the smaller counties having but one or two deaths in 1932, present figures too small for sound deduction.

It will be noted that Modoc County leads the list with ten cases reported per death. In this county there were twenty-one cases and two deaths reported in 1932. Next come Colusa County with

TABLE 4.—*Status of Tuberculosis Reporting in California, 1932, Compared With Selected Others*

	Cases Reported	Deaths	Ratio Reported Cases Per Death
Minnesota....	2,969	1,049	2.830
N. Y. City....	11,372	4,540	2.505
Massachusetts	5,072	2,301	2.204
California....	10,878	5,027	2.163
N. Y. State..	6,986	3,462	2.017
Washington	1,650	846	1.950
Oregon	644	354	1.819
Montana	369	301	1.226
Utah	84	111	0.756

TABLE 5.—*Tuberculosis Reporting in California, 1932*

County	Ratio of Reported Cases Per Death	County	Ratio of Reported Cases Per Death	County	Ratio of Reported Cases Per Death
Alameda	1.80	Marin	.27	San Mateo	1.47
Alpine	0	Mariposa	0	Santa Barbara	1.92
Amador	1.72	Mendocino	.30	Santa Clara	1.10
Butte	.28	Merced	.79	Santa Cruz	.93
Calaveras	.30	Modoc	10.50	Shasta	.64
Colusa	8.00	Mono	0	Sierra	1.00
Contra Costa	6.62	Monterey	1.26	Siskiyou	.56
Del Norte	0	Napa	.46	Solano	1.23
Eldorado	1.33	Nevada	.133	Sonoma	.40
Fresno	.89	Orange	1.57	Stanislaus	2.03
Glenn	5.00	Placer	1.04	Sutter	7.50
Humboldt	1.28	Plumas	1.50	Tehama	1.00
Imperial	.35	Riverside	1.75	Trinity	0
Inyo	1.00	Sacramento	2.24	Tulare	1.14
Kern	3.02	San Benito	.23	Tuolumne	5.00
Kings	1.23	San Bernardino	.78	Ventura	.90
Lake	.40	San Diego	1.69	Yolo	3.37
Lassen	0	San Francisco	2.31	Yuba	8.00
Los Angeles	3.10	San Joaquin	2.12	Outside	.....
Madera	1.11	San Luis Obispo	1.06	Total	2.16

eight cases reported per death (16 cases and 2 deaths), and Yuba County with eight cases reported per death (24 cases and 3 deaths). Next is Sutter County with 7.5 cases reported per death (15 cases, 2 deaths). Contra Costa County reports 6.62 cases per death (106 cases, 16 deaths). Then comes Glenn County with five cases reported per death (10 cases, 2 deaths). Tuolumne County has the same ratio with twenty cases and four deaths. Yolo County reports 3.37 cases per death (27 cases, 8 deaths). Next comes Los Angeles County with 3.1 cases per death; then Kern County with 3.02; then San Francisco County with 2.31; then Sacramento County with 2.24; then San Joaquin County with 2.12, and Stanislaus County with 2.03, and Santa Barbara with 1.92.

At the other end of the list of the counties reporting deaths in 1932 is Nevada County with but .13 cases per death. Then in order of improvement, San Benito, Marin, Butte, Mendocino, Calaveras, Imperial, Sonoma, Lake, Napa, Siskiyou, Shasta, San Bernardino, Merced, and finally, Fresno with .89 cases per death.

It is significant that among these fifteen counties with the lowest ratio of cases reported, all but two (San Benito and Siskiyou) are in the group of counties having the highest death rates from tuberculosis in this state. Among the fifteen counties having the highest ratio of cases reported, eight are in the group having the lowest death rates in the state, and the remaining seven include Los Angeles County, Kern, Sacramento, San Francisco, and Santa Barbara, where special tuberculosis problems exist. It would seem, therefore, that reporting ratio is a fair index of the adequacy of the tuberculosis control program in each locality.

Among the cities listed on this table, Long Beach leads the list with 228 cases and 38 deaths, a ratio of 6.0 cases per death. Next comes Berkeley with 86 cases and 16 deaths, a ratio of 5.38. Next comes Oakland with a ratio of 3.74; then Pasadena with a ratio of 2.97; then Los Angeles with a ratio of 2.67; then Sacramento with a ratio of 2.20, and finally, San Diego with a ratio of 1.67. The contrast between Los Angeles City, with a reporting ratio of 2.67, and Los Angeles County with a ratio of 3.10, is of special interest. (It is of interest to know that the Los Angeles Tuberculosis Society was responsible for an initiative ordinance making it mandatory upon the City Council to provide public health nurses in proportion to the number of tuberculous patients reported by physicians.)

It should be recalled that Long Beach has an active Health and Welfare League, collected 6.3 cents per capita in last year's seal sale, and has had a full-time health officer for many years. Berkeley, likewise, has had a well coördinated health program with

Certain Cities

City	Ratio of Reported Cases Per Death
Oakland	3.74
Berkeley	5.38
Los Angeles	2.67
Long Beach	6.00
Pasadena	2.97
Sacramento	2.20
San Diego	1.67

excellent coöperation from the local physicians. In 1925, it was my privilege to call the attention of Berkeley physicians to the fact that in that year the reporting ratio was 3.4. The following arguments were presented by means of a series of weekly postcards:

"Why report tuberculosis? Because it is an infectious disease. It may become infectious at intervals for many years. A tuberculosis patient is notoriously fickle in his choice of medical attendants. He may remain a menace to the community for many years after numerous attending physicians have been discharged. He, therefore, belongs in a category with the typhoid and diphtheria carrier, and becomes subject to regulation by law whenever his actions endanger the community. The health department 'stands pat' in order to assist the physician to obtain continuous coöperation from his patient; see that all the physician's instructions to the patient are such that the community is given maximum protection; assist the physician to obtain institutional care for the patient when desired; see that the patient at no time becomes a public menace whenever he is not under competent medical care; see that the exposed members of the family are carefully examined and observed in the hope of detecting secondary cases in their incipient and curable stage. The health department in no way contemplates interference with private physicians; disturbing the patient's confidence in his physician; making any statement to the family not approved by the physician; divulging confidential matters relating to the patient, or, in fact doing anything to which the physician who is well versed in all aspects of tuberculosis could possibly object. Reportable cases are those which, by their clinical findings, appear to be active cases, whether the sputum is negative or positive. Educating the public to regard tuberculosis as a community problem is a necessity. Such education can be done effectively by a public agency having reliable information on the morbidity and mortality trend in the community over a period of years. Such information can only be obtained by coöperation between physicians and the health department. This campaign by public agencies coöperating with private physicians to teach early recognition of tuberculosis, the proper means of preventing infection, the value of sanatorium care, the importance of hygienic living, has resulted in the greatest medical triumph of this generation, namely, the lowering of the tuberculosis death rate by more than one-half. Then why not report tuberculosis?"

Lest we be too severe with our colleagues in the practice of medicine, let public health workers recall that reporting of tuberculosis also depends upon the willingness of those with the symptoms of the disease to seek early medical care. There is no doubt that many physicians, especially in the outlying counties, do not see a case of tuberculosis until it comes to death. Poor reporting, therefore, is not solely a criticism of the medical profession. It may also result from ineffective methods of promulgating our so-called early diagnosis campaign.

(To be continued)

CLINICAL NOTES AND CASE REPORTS

POLYP OF THE SIGMOID IN A CHILD

By David N. Yaker, M. D.
Los Angeles

EIGHTY per cent of all polyps in the intestinal tract are found in the rectum and sigmoid; and sixty per cent of these are found in the rectum.

Tuttle, in his "Diseases of the Anus, Rectum, and Pelvic Colon," makes the following statement: "The nature of development is explained as follows: a closed follicle or gland, becoming distended from inflammatory or other causes, protrudes into the cavity of the rectum, carrying the mucous membrane before it, and sometimes dragging a small portion of the submucosa after it; through its weight, and contraction of the circular fibers of the gut in nature's efforts to rid herself of the enlargement, the follicle is forced downward, stretching the mucous membrane, and eventually dragging it out into the shape of a pedicle; the irritation and hyperemia caused by this sagging, and the obstruction to the return circulation from the growth, bring about an edema and hypertrophy of the follicle and its surrounding tissues, and thus the polypus is formed."

These polyps may have pedicles as long as six inches.

REPORT OF CASE

On February 2, 1933, a girl, age five, was sent to the office with a diagnosis of a rectal polyp, this diagnosis having been made by the family physician, who told me subsequently that he had seen it. The mother stated that the child had been having blood in her stools on and off for the past year; whenever the protrusion appeared, the child would become frightened and cry; but the mother was quite certain that the protrusion caused no pain. The day before, as she was preparing to bathe the child, she saw a little growth and called a physician.

Examination revealed a normal anus and rectum, both digitally and rectoscopically; no polyp could be seen or felt. The patient's mother was told to call the next time there was a protrusion.

On the evening of August 6, 1933, there was a protrusion; by the time the patient's home was reached, the protrusion had disappeared; there was a bloody discharge about the anus; digital examination was done, and the polyp could not be felt; nor could the polyp be seen on rectoscopic examination. On August 7, 1933, the child was proctoscoped to 18 centimeters, but no polyp could be seen. On August 16, 1933, the polyp again protruded, but could not be seen or felt after arrival at the patient's home. The polyp again protruded on September 5, 1933, but reduced itself before it could be seen. On September 7, 1933, the child was sigmoidoscoped to 25 centimeters, but no polyp could be seen. On September 9, 1933, the polyp protruded; the mother was told to keep the child in the same position she was in until my arrival at her home, when a round polyp three-fourths of an inch in diameter was found, attached to the bowel wall by a narrow pedicle about four inches in length; a ligature was passed through the polyp itself for traction purposes, and then a ligature was passed through the pedicle, and the polyp excised. No anesthetic had to be used.

There has been no complaint as to any rectal symptoms since the date of removal of the polyp.

This polyp proved to be an adenomatous polyp.

COMMENT

In spite of thorough examination, this polyp could not be seen exactly at its point of attachment to the bowel wall, which was more than 25 centimeters above the anus. The only way in which the greater frequency of protrusion in the last few weeks can be explained is by the fact that the longer the polyp remained in the bowel the more elongated the pedicle became, and as it passed outside the anus during defecation, it was grasped by the sphincter. Further, whenever this protrusion did occur, there was a slight intussusception, which, fortunately, did not last long enough to produce symptoms. This case further emphasizes the importance of a most thorough proctoscopic examination in children bleeding from the rectum, and complaining of other rectal discomforts.

727 West Seventh Street.

POSTURE IN CHILDHOOD

By Edwin F. Patton, M. D.
Los Angeles

ALL students of child health are concerned with the question of posture. All recognize its great importance as a health index, and as a health influence. But few understand it well enough to analyze or appraise it correctly. Consequently, much misguided effort is expended on it.

Posture classification is not so simple that it can be done in an off-hand manner. Posture is not just a way of standing. Posture is a complex. It is a summation of at least ten components, all of which must be recognized and taken into account. A descriptive list follows:

1. Body type. Posture varies with hereditary build. The stocky, slow-growing child, with short trunk, short neck, and broad shoulders will not have as much difficulty standing well as will the tall, slender, rapidly growing child with the elongated trunk, long neck, and narrow shoulders. The examiner must know the build of both parents, and sometimes of grandparents, to get a clear picture of the posture possibilities and problems of the child under consideration.

2. Body habitus. By this is meant the way the skeleton is hung together. Much of this, like type, is constitutional with the individual, through heredity. Some pelves, especially those of girls, have an excessive forward inclination. This starts the lower spine off with an exaggerated lumbar hollow, which predisposes to an exaggerated dorsal curve. Some clavicles are shorter than others. The short clavicles mean narrow, forward shoulders, with the scapulae pulled anteriorly around the chest, throwing the "wings" into prominence. The fat hypopituitary child will have a round back with a sharp lumbar lordosis, and sagging shoulders. None of these are correctible. Attempt at correction is a mistake.

3. Tone. Some muscular systems are constitutionally more elastic than others. The atonic, loose-jointed child is prone to slump; the tonic child to stand straight.

4. Nutritional condition. The undernourished child is likely to sag through lack of sufficient strength to remain upright.

5. State of energy. The tired child, too, has insufficient strength to hold erect. Overactivity, overexcitement, too much school or entertainment, may be the devitalizing factor.

6. Past acute or long-standing illnesses. Illness consumes nutrition and energy, with a deleterious result on posture, which may be temporary or persistent, according to rate and completeness of recovery.

7. Existing illnesses. Toxic poisoning, visual defects, anemia, asthma, and many other preying conditions are often at the root of bad posture.

8. Growth dyscrasias. Epiphyseal disorders of the vertebrae produce a bad round back, requiring radical orthopedic measures to prevent or correct. Discrepancies in rate of growth of the two legs, or of the two halves of the trunk, or the two shoulder girdles, produce scolioses, rotations, and lists, requiring specialized orthopedic attention. Likewise spinal anomalies.

9. Habit. A child having developed, from one cause or another, a bad posture may continue in that bad posture through lack of realization of how good posture differs from it. This is the type of case especially amenable to training.

10. Feeble-mindedness. This condition is often accompanied by a slumping posture, which is useless to try to improve.

A quick way to determine the best possible posture, of which an individual child is capable, is to exert vertical traction on a lock of hair picked up on the very crown of the head. This will draw in the chin, straighten up the neck, pull the chest forward, let the shoulders fall back, flatten the lower spine and retract the abdomen—as much as possible. In many children the improvement will be slight. This means that they stand the way they do because they are built the way they are; and no amount of "posture work" will remedy the situation.

It is as much a mistake to seek an impossible ideal in posture as to neglect a correctible slump. Appraisal by means of the standards outlined will demonstrate the attainable ideal in each instance, so that an unattainable ideal will not be set up as a goal.

Relaxed slumping posture, in a child who can stand well, is a vicious cycle. Substandard health causes the posture to relax. Then the relaxed posture interferes with physiology, to the further detriment of health. Correction requires, as a preliminary, the breaking up of this cycle by amelioration of health condition through medical and surgical care. After that is accomplished, direct efforts on the posture itself are applicable. But attempt to correct relaxed posture by exercises alone without first improving the general state may be like whipping up a tired horse. There will be a momentary spurt, but no lasting improvement, until muscles and supporting structures are in a condition to respond.

3875 Wilshire Boulevard.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

CHRONIC MAXILLARY SINUS INFECTION

ETIOLOGY

F. C. Kracaw, M. D. (411 Thirtieth Street, Oakland).—Chronic maxillary sinusitis may arise from either of two sources, nasal infection or dental infection. Since chronic infection of nasal origin usually is not a primary condition, but occurs secondary to an acute infection of the antrum, its etiology must necessarily include the etiology of acute maxillary sinus infection, with the added factor of either repetition or neglect.

Every acute antrum infection of nasal origin is, in its beginning at least, simply a part of an acute nasopharyngitis, the infection spreading to the antrum by direct extension, or by way of the lymphatics and blood vessels. The condition in the sinus usually clears up with the disappearance of the infection in the nose. If this does not occur, either because of impaired ventilation, impaired drainage, or too serious damage to the cilia, then chronic infection is very likely to supervene. The etiologic factors just mentioned emphasize the importance of thorough and complete treatment of every acute nasopharyngitis.

Anatomic irregularities, such as deviation of the septum or enlargement of the turbinated bones, are the most common bars to normal ventilation and drainage. Septal deviations are of major importance, both directly and indirectly, in the causation of maxillary sinus infection. The convexity of the deviation may impinge upon the middle turbinal, forcing it against the naso-antral wall and thus closing the ostium. Just as important is the compensatory turbinal hypertrophy which occurs on the side of the concavity. This may, and often does, proceed to the point of closure of the antral ostium. Even though there be no actual hypertrophy of the middle turbinal, but only a chronic tumefaction, this shuts off ventilation and drainage, and is therefore conducive to the development of a chronic infection. Further, as a result of repeated acute nasopharyngitis, there may be a hyperplasia of the tissues surrounding the ostium sufficient to narrow it to the point of serious interference with ventilation and drainage.

Chronic infection of the maxillary sinuses is quite frequently seen associated with a nasal allergy. But whether, in any specific case, the conditions stand in the relation of cause and effect, it is indeed difficult to determine. Many cases presenting allergic symptoms have been cured by proper care of chronic infection in the antra; but many more cases have not been helped at all so far as allergic symptoms are concerned. In those cases which are benefited, it is probable that the allergy is purely bacterial.

Direct trauma to the external walls of the maxillary sinuses may cause extravasation of blood, either into the walls of the sinus or into its cavity, which will later lead to an empyema. Trauma to the nasal mucous membranes, such as may be occasioned by swimming or diving, is often a potent factor in the development of acute and later chronic infection.

Maxillary sinus infections of dental origin are less frequent than those of nasal origin. They arise secondary to disease processes in the molars and premolars, which are frequently in very close relation to the floor of the antrum. Infection may spread to the antrum by direct extension, by way of the lymphatics and blood vessels, or by trauma during extraction of the diseased teeth.

If one wished to prolong the discussion, many minor etiologic factors might be considered. However, I believe the greater good will be accomplished by emphasizing the importance of repeated acute infections. Following each acute attack, there is an increased infiltration of the mucous membrane of the sinus, and an increasingly difficult and slow return to normal; until, finally, the time comes when the power of recovery is lost and a chronic infection is established.

SYMPTOMS

The symptoms of chronic maxillary sinusitis may be divided roughly into subjective and objective. The most common subjective symptoms encountered will be one or more of the following:

(a) *Nasal Obstruction.*—This symptom is fairly common among sufferers from this condition. If there are anatomical changes present, such as deviation of the septum, turbinal hypertrophy, or polyps, the obstruction is constant and changes in temperature, humidity, position, etc., do not influence it. If, on the other hand, the obstruction is caused by tumefaction due to loss of vasomotor tone or to allergic factors, then it will sometimes be present, while at other times the nose will be clear; and changes in position or environment will often serve to give temporary relief and allow free respiration through the affected side.

(b) *Postnasal Discharge.*—This may be almost constant, but in a great many cases will be described as worst and most annoying on first arising in the morning. Many patients will go into great detail in describing the difficulties of getting the throat clear at this time. This is due, of course, to secretions which have gathered during the night, and which have a tendency to lodge in the hypopharynx. The character of the discharge will vary from a clear mucous to mucopurulent, or even a frank purulent appearance.

(c) *Nasal Discharge.*—Here again there is variation from clear mucous to frank purulent discharge. Probably the most common is mucous in

character and of a golden-yellow color. The discharge may be present in small amounts most of the time or, more commonly, a large mass suddenly makes its appearance in the nose from time to time and must be disposed of. The patient frequently complains of having to use two to six handkerchiefs daily, and will commonly display one tinged with the familiar yellow color.

(d) *Discomfort in the Cheek of the Affected Side.*—This symptom is not so common in chronic infections as it is in acute conditions. If present it usually consists of a sensation of "heaviness," or perhaps nothing more than a mere consciousness of the cheek. External pressure seldom elicits any sign of tenderness.

(e) *Cough.*—Many cases of persistent nonproductive cough have had a chronic antrum infection as their cause. Very often it is this symptom which first brings the patient to his physician; and very often, too, a long gamut of trial and error must be run before the true cause is found, and proper treatment instituted.

(f) *Pain in the Teeth.*—While this is not a common symptom, occasionally a case is seen in which the patient complains of actual toothache, though the teeth are in perfect condition. More often there is simply complaint of tenderness on chewing.

(g) *Anosmia.*—Is occasionally seen in antrum infections, but occurs more frequently when other sinuses are involved.

(h) *Cacosmia.* — Occurs most frequently in cases of maxillary sinus empyema of dental origin.

The principal objective symptoms presented will be some or all of the following:

1. *Changes in Nasal Mucous Membranes.*—There is very often a moderate to marked general reddening. The middle turbinal may present a variety of changes. At times, there will be nothing more than a rather marked injection of the anterior tip. Very often the anterior tip is tumefied or actually hypertrophied; and it is not at all uncommon to find the entire middle turbinal enlarged and lying tightly against the naso-antral wall. In my experience, the posterior tip is not often hypertrophied in antrum infections. The inferior turbinal is often tumefied, and sometimes undergoes hypertrophic change.

2. *Nasal Discharge.*—Any abnormal secretion in the region of the lower border, or the anterior tip of the middle turbinal is suggestive of antrum infection, especially if, after being wiped away, it immediately reappears upon the head being tipped to the opposite side. However, more often than not, any abnormal secretion is seen only as "cobwebs" between the middle and inferior turbinals and the septum. The absence of discharge means nothing. If the infection is of dental origin, the discharge is usually purulent and of very foul odor.

3. *Polyps.*—May or may not be present. They are most likely to occur when the sinus infection is associated with a nasal allergy, and when there is ethmoid as well as maxillary sinus involvement.

4. *Transillumination.* — Signs elicited by this means are unreliable at best. However, dimming or absence of the optic crescent, and absence of the optic reflex, may be taken as suggestive of a past or present chronic antrum involvement.

5. *Lung Markings in the Roentgen Films.*—Accentuation of the lung markings in general, and of the region of the hilus in particular, are always suggestive of chronic maxillary infection.

* * *

DIAGNOSIS

Andrew B. Wessels, M.D. (Professional Building, San Antonio, Texas).—The most important factors in the diagnosis of chronic maxillary sinusitis are: history of an acute or recurring acute maxillary infection and frequent recurring colds, discharge visible in the nose or postnasally, purulent or mucopurulent in nature; use of several handkerchiefs daily, which may be soiled with a golden-yellow color.

Transillumination is a valuable aid, but checks only part of the time with the roentgen ray and operative findings.

Radiographic examination will show pus or fluid in the sinuses, and thickened membrane or growths in the sinuses such as hard tumors or polypi.

Injection in the sinuses of iodized oil will, sometimes, show the extent of the hyperplasia of the lining membrane, the presence of polypi or other growths in the antrum. On the contrary, however, lipiodol injections can be a disadvantage sometimes, since it may flow around a mass and obscure it, while stereoscopic films will clearly outline the condition.

Lavage of the antrum (either through the normal opening, which is possible in about 70 per cent of cases, or through a needle puncture beneath the inferior turbinate) may show discharge in the washings and, if present, the kind and amount may range from a few shreds of mucopus to creamy or flocculent pus. A cell count of the centrifuged washings, if the sinus is infected, and even though there may be no occult pus, will show a preponderance of polymorphonuclear cells on staining.

The teeth of the upper alveolus should be carefully investigated to ascertain if infected; for dead teeth or roots penetrate the antrum floor, or are in close approximation of the floor of the maxillary sinus. Infected teeth need not penetrate the sinus floor to produce an infection, but may be as distant as one-fourth of an inch or more.

Sensitization of food, pollen or bacteria may predispose to a chronic maxillary sinus infection, the sinus infection being superimposed on the allergic sensitization; in which case the allergic factor should be eliminated first, either by desensitization or removal, before operative proceedings are instituted. The membranes of the sinuses become edematous and later are infected, and they progress to an inflammatory, polypoid degeneration.

Any endocrine imbalance should be ascertained and corrected, if possible. Avitaminoses should be considered in the diagnosis, and corrected by proper procedures in diet, if possible.

PROGNOSIS OF CHRONIC MAXILLARY SINUSITIS

Speaking generally, patients with chronic sinusitis never recover without treatment. If all the predisposing factors, such as avitaminoses and allergic sensitizations are corrected, operative treatment, if properly performed, will cure two-thirds of the cases, and one-third will be improved, although there will remain some polypoid tissue, some discharge or crusts.

Much of the discredit placed on the results of sinus operations is due to lack of understanding of the underlying causes. Allergic patients will never be cured, and very little relieved, by the most extensive procedures if the sensitizing agent is not found and removed.

Deviations of the nasal septum, which ordinarily interferes with free aereation and drainage of the sinuses, should be corrected before a good result can be expected.

Operations, if instituted, should be thorough and complete, as befits the individual patient. Frequently a cure, or improvement, will be achieved with a window resection in the naso-antral wall, or the operative procedure will have to be more radical and complete enough to remove any, and all, diseased mucous membrane lining the sinus, because recurrences are only too frequent.

* * *

TREATMENT

A. A. Steele, M. D. (5040 West Pico Boulevard, Los Angeles). — The successful treatment of this condition often requires both medical and surgical skill. The former is always needed, and the latter may be necessary to remove mechanical obstructions.

Having reached the chronic stage, the local tissues, as well as the general body defenses, have become accustomed to the infection and do not so actively combat its invasion; this is as true in the stage of thickened membrane, with free pus, as it is in the later stages without pus, or where fibrous tissue has formed.

To overcome this phagocytic inactivity, the body as a whole must be stimulated and assisted; this may be accomplished in various ways, and usually requires all available resources. Some of the modalities herein mentioned may seem to be of minor importance, but when used in conjunction with other modes of therapy, they have a synergistic action.

Surgery is indicated in those cases that have a deviated septum, polypi, spurs, or enlarged turbinates. When the middle turbinal is against the outer wall, it may be fractured, and the tip moved toward the midline. Sometimes, when it is hypertrophied, a portion may be removed or cauterized to give proper nasopharyngeal ventilation, and drainage for the sinuses.

Oil sprays, such as liquid albolene, containing two grains of menthol to the ounce, or one with ephedrin as an ingredient, will help relieve the congestion, as well as the associated sense of fullness in the head, and the extra nasal secretion that may be present. Watery sprays are not advisable to use over a long period of time, but for occasional use, 10 per cent neosilvol has some advantages in that it is not irritating or distasteful, as some preparations are, and does not stain clothing if some is spilled. It also has an astringent and bactericidal effect, and may be instilled with a medicine dropper with the patient in an extreme opisthotonos position, or by holding the head down in such a position that gravity will carry it to the desired area. After its instillation, a few short sniffs will spread the solution over the nasopharyngeal mucous membrane and the excess can be expectorated.

After removing respiratory impedimenta by surgery, or through the lessening of turgescence by sprays, attention may be turned to other medical support.

Endocrine abnormalities of the patient must be considered; not that glandular therapy will have any direct disinfectant effect on a sinus infection, but it may have a definite relation to predisposing causes such as: lowered resistance to infection, or congestion of mucous membranes of the nose and throat as seen in some cases of hypothyroidism, and also, as quite often noted, in women with ovarian dyscrasias. Unquestionably, there is a glandular relationship between general body immunity and infections. It is an everyday occurrence to see some women develop pimples about a week or ten days before menstruation, and to see the lesions practically disappear a few days following the period, and also to note that the condition can be cleared up by administering ovarian therapy.

In animal experimentation, it has been shown that, following pancreatectomy, death follows from sepsis rather than from shock or loss of digestive function. A small piece of the pancreas, preferably from the tail, implanted in the body before or during pancreatectomy, will preserve the immunizing response to bacterial invasion.

Diabetics often suffer from infections, further supporting the theory that the pancreas has some function pertaining to immunity.

Sajous,[1] in discussing immunity, emphasized the part performed by the thyroid and adrenals.

Y. Tokumitsu[2] experimented with a large number of male rabbits and found that changes in the agglutinating power of the blood could be produced by various endocrine injections.

If the patient has no evidence of glandular dysfunctions, one can devote his energy to other forms of treatment to assist in eradicating the disease.

Vitamins A and B have been recently shown to have some part in the normal tonicity of the nose and throat, and their resistance to respiratory infections. Cody[3] concluded, from his research and experimental work, that a lack of vitamin B was characterized by a postnasal discharge and thickening of the posterior portions of the middle turbinates. He also describes the surface of the mucous membrane as becoming "moist and creamy-white." He further believes that vitamin A is

1 Internal Secretions and Principles of Medicine, Ninth edition, Vol. I, p. 298.

2 Tokumitsu, Y.: Japan Med. World, 9:217 (July), 1929.

3 Cody, Claude C.: Arch. Otolaryng., p. 661, 1932.

essential to maintain the normal nutrition of the nose and throat.

Personal observation of vitamin A in children reveals that in some instances there is a close alliance between its consumption and the ratio of respiratory infections. Patients have been observed at different times of the year, who were taking vitamin A for a period, and then not using it for an equal period, and the frequency of infections was more marked during the time it was not being taken.

Turner and Loew [4] found that the percentage incidence of bacteria in the nasal cavities and middle ear in animals fed active carotin was noticeably less than encountered in animals fed faded carotin, or in those receiving no vitamin A.

Here again, as with the endocrines, if the patient already has enough, a larger supply is not called for.

When the patient has been thoroughly examined, ventilation and drainage of the nose and sinuses taken care of, endocrines and vitamins provided if needed, he is then ready for other considerations.

Rest is one of these, and is just as important as for tuberculosis or any other infection. It is useless to try to do much for a chronic infection of this kind if the patient is working or exercising to the point of exhaustion. A certain amount of exercise is beneficial in that it increases the circulation, and aids in the elimination of toxins.

Leukocytic extract is a valuable aid that is not used as much as it could be, and to advantage. In 1909 it was heralded as a step forward in the nonspecific treatment of infections.

Hiss and Zinsser,[5] working in the laboratories of Columbia University, were of the opinion that leukocytic extract would relieve and protect, as well as stimulate the fatigued and overworked leukocytes. Comparison of treated and untreated pneumonia cases in the Massachusetts General Hospital showed that the mortality rate was more than double in the cases which did not receive leukocytic extract.[6]

It is one form of medication that is safe. In using several thousand ampoules, I have never known of any unpleasant symptoms following their use. There are several preparations of the product on the market, some for intramuscular use, and others for either intramuscular or intravenous injection. The action of the latter is quicker when given intravenously, and there is no possibility of there being a tender spot at the sight of injection, as there may be if given in the muscle.

A number of patients with chronic maxillary sinusitis were daily given 4 cubic centimeters of leukocytic extract intravenously for two weeks, and then three times weekly for another month in conjunction with other treatment that had formerly been ineffective. The results were gratifying. One patient, who had had pain and tenderness for more than four years, was free of symptoms at the end of three weeks. The result has been similar with other patients.

It is difficult to put these patients on a percentage basis of cures, as some will stop treatment shortly after abatement of symptoms and believe themselves cured, yet still retain a low-grade infection that may not cause trouble at the time; but which will flare up later, during a period of lowered resistance, as a new infection, whereas it is an exacerbation of the previous condition.

Physiotherapy is helpful in chronic infections, and there are several forms of treatment that are useful in the management of the topic under discussion.

Diathermy, both direct and indirect, applied to the nasal and maxillary regions, lessens the congestion by dilatation of the capillaries, and at the same time the local rise of temperature increases the phagocytic action of the leukocytes present. With the augmented circulation there is brought to the area a greater number of white blood cells to accentuate the cellular activity. Usually after a twenty or thirty-minute treatment, the patient will breathe more freely, and in the cases that still have a purulent discharge there will be an increase in its output as a result of increased phagocytosis and better drainage. The treatment may be given daily, or oftener if desired, and the technique, if not already known, can be found in practically any book on physiotherapy.

Ultra-violet radiations applied to the whole body, either from artificial means or in the form of sun baths, increases the action of the skin and aids the processes of immunity. Sunlight is available to nearly everyone, and can be taken during part of the patient's rest period.

A cold shower, or a dip into a tub of cold water the first thing in the morning, is fine for some patients as a tonic and stimulant, but one must use discretion in prescribing it. The bath should be brief, and followed by a brisk rub with a coarse towel wielded by the patient himself. The exercise of rubbing helps to produce the reaction, which should be a warm glow all over the body almost immediately after emerging from the cold water, or at least by the time the patient is dry. If this is not felt, or the patient feels cold after the procedure, it had better be discontinued.

Vaccine therapy, in graduated doses, sometimes gives good results and can easily be administered with the leukocytic extract; giving the latter intramuscularly on the days when vaccine is being administered.

There is a negative phase[7] of vaccines at times that temporarily lowers the immunity of the patient, but this period is usually of short duration and fortunately does not happen very often in clinical work; hence when vaccine is given in conjunction with therapy that will support immunity, the negative phase is not to be worried about.

I have noted that individuals as a rule do better on a vaccine prepared from bacteria obtained from the former habitat of the patient. Theoretically, an autogenous vaccine should be ideal, but my experiences have been rather disappointing.

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4 Turner, R. G., and Loew E. R.: J. Infect. Dis., p. 102 (Jan. and Feb.), 1933.

5 Hiss and Zinsser: J. Med. Res., 15:245, 1909; *Ibid.*, 17:397, 1910.

6 Leonard, George F.: J. M. Soc. New Jersey (Oct.), 1919.

7 Sia, R. H. P., and Zia, S. H.: Proc. Soc. Exper. Biol. and Med., 29:791, 1932.

Bacteriophage therapy is struggling to gain recognition, and no doubt will play a more important part in our medical armamentarium when more is learned about it. Much has been accomplished by its use in some types of infection, but the successful treatment of nasal and sinus infections, from the bacteriophage standpoint, will probably not come until further development is achieved in polyvalent bacteriophage.[8]

The non-surgical treatment of chronic maxillary sinusitis is to be tried faithfully in all cases, but at times, when a lot of fibrous tissue has formed in the sinus, infection may become established between the lining and the periosteum. When the condition has progressed to this stage, it is quite likely to require the surgical removal of the lining membrane.

SUMMARY

1. Provision of ample ventilation and drainage is essential in the treatment of chronic maxillary sinusitis.
2. Rest is important.
3. Endocrine and vitamin deficiencies have to be considered.
4. Leukocytic extract is a valuable aid.
5. Physiotherapy is distinctly beneficial.
6. Vaccine therapy helps in some cases.
7. Radical surgery may have to be used as a last resort.

This paper on treatment of chronic maxillary sinusitis is written by one who does not specialize in nose and throat work, but in the daily grind of general practice attends quite a number of patients suffering with chronic maxillary sinusitis.

8 Bronfenbrenner, Jaques: Proc. Soc. Exper. Biol. and Med., 30:729, 1933.

Practice of Naprapathy Enjoined — Naprapathy Explained.—The state of Iowa filed a petition to enjoin the defendant from practicing medicine and surgery in Iowa. The trial court dismissed the petition, and the petitioner appealed to the Supreme Court of the State.

The defendant conceded that he practiced the healing art. He contended, however, that because he practiced naprapathy and used neither medicines nor surgery, he did not practice nor claim to practice medicine or surgery, within the meaning of the Medical Practice Act of the state. In explanation of naprapathy, he testified:

"Our theory is that disease originates in the baser tissues of the body, such as connective tissue, especially white fibrous connective tissue, which binds and holds the bones forming the joints of the body together. And if they are in any way injured they are prone, as connective tissue always is, to thicken and shrink. And our theory is that a stretchment of the tight connective tissue structures is essential in the restoration of the normal function in the organs supplied by the nerves involved in the tightening of the tissues. And that makes the essential difference, thus, between a chiropractor and a naprapath. It would bind the vertebra closer together, and it would create a condition the opposite of a partial subluxation or displacement, so that two vertebra would be more difficult to displace one from the other in this abnormal tightened condition than it would if it were normal. There would be a restricted movement."

One Oakley Smith, described in the record as the discoverer of naprapathy, testified for the defendant as follows:

"Naprapathy is a nonmedical science or profession, based on three elements. One: discovery. The discovery that shrunken connective tissues or ligaments produce a great variety of remote ailments. Second element is invention; the invention of a method by which manipulation or exercise or motions could be symbolized in record form. And one inheritance. The same as when one might inherit money from his parents and didn't earn it. . . . In the broad sense of physical education chiropracty [sic] and the nonmedical part of osteopathy and Swedish movement, all belong to the nonmedical and nonsurgical field. From there on there are definite technical differences, such as those described by Doctor Howard, that instead of the subluxation or bone out of place the naprapath has discovered by means of laboratory instruments and precision it was a case of shrunken ligaments damaging the nerve, rather than bone damage. That made a difference in the shortening up of the number of treatments required, and, increasing the surety of cure. In other words, the difference is largely a matter of emphasis. But that same thing might be said regarding the difference between naprapathy and physical education as taught in the University of Iowa, where they treat sprains and strained ligaments and injured joints, curvature of the spine, different kinds of flat-foot, weak arches of the foot; there again it is a matter of emphasis. Physical directors do that for pay without a license or any physician or surgeon around. . . . Our school does not teach the healing of human ailments by the administration of drugs. That is outside of our theory. We teach no surgery. Our pupils are taught to treat human ailments by manipulation. . . . I think Kentucky is the only state which has made a provision to permit naprapaths to take an examination where it wouldn't be all farce. That is the opinion of the naprapaths. . . . This is not only a method of treatment of human ailments, but I have cured horses. It is not limited to human ailments. It is limited to anything that has a spinal column and joints and ligaments. It is a healing art. . . . Naprapathy is a nonmedical healing art. Pupils of our school were admitted to practice in Illinois. They are not now. . . .

In *State* v. *Hughey*, 208 Iowa 842, 226 N. W. 371, said the Supreme Court, medicine was not given nor was surgery practiced, but the defendant, who claimed to diagnose ailments and to treat them by a laying on of hands, was held to have practiced medicine and surgery. The fact that the present defendant, continued the court, uses a system analogous to osteopathy and chiropractic is not material. If the defendant were a licensed osteopath or chiropractor, a different question would be presented. Since the Medical Practice Act of Iowa gives no recognition to naprapathy, the courts and the administrative officers of the state can give no recognition to it. The system must be deemed only a name and an evasion of the statute.

The defendant maintained an office in one of the principal office buildings of Cedar Rapids. In the directory of the building his name appeared as "Dr. Banner Howard." Admittedly he undertook to diagnose the ailments of his patrons. As a witness, he claimed to have studied "diagnosis." Correct diagnosis is one of the first duties of the qualified physician, but purported [sic] diagnosis is the first resort of the unqualified and the first requisite of a miraculous cure; ailments which an unqualified practitioner professes to discover and to cure are only such as his own diagnosis declares. Because his new system of naprapathy affords him a complete refuge from any critic who does not follow it, the defendant is subject to no check other than his own judgment. It is not a valid defense, said the Supreme Court, for the defendant to show that he is practicing naprapathy.

The defendant argued that the Iowa statute authorizing the proceedings by injunction was unconstitutional. This question, said the court, was adjudicated against the defendant on a former appeal (*State* v. *Howard* (Iowa), 241 N. W. 682; J. A. M. A. 99:1886 (Nov. 26), 1932).

The judgment of the trial court, dismissing the petition of the state for an injunction, was reversed.—*State* v. *Howard (Iowa), 245 N. W. 871. (The Journal of the American Medical Association.)*

California and Western Medicine
Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California and Nevada Medical Associations
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
Telephone Douglas 0062

Address editorial communications to Dr. George H. Kress as per above address; advertising and business communications to the Secretary-Treasurer, Dr. Emma W. Pope, also at the above address.

EDITOR . . . . . GEORGE H. KRESS

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

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Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Communications regarding advertising should be sent to the Secretary-Treasurer of the California Medical Association, Dr. Emma W. Pope, Four Fifty Sutter Building, San Francisco, Calif.

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EDITORIALS*

DR. EMMA W. POPE RETIRES AS SECRETARY-TREASURER

California Medical Association Loses an Efficient Administrative Officer.—At the last meeting of the Council of the California Medical Association, Dr. Emma W. Pope of San Francisco notified the councilors that she desired to retire from active work as secretary-treasurer. In accepting her resignation, resolutions of appreciation were adopted, thanking her for many years of loyal and efficient service. (See Council minutes, page 201.) To members of the Association, the real executive officer of the organization must always seem embodied in the secretary-treasurer, to whom is entrusted the responsibility for the management of the central headquarters, the arrangements of the annual session scientific programs and numerous details of each year's meetings, as well as many other duties, incident to queries for information and requests for aid which are constantly received from component county societies and members seeking help in the solution of their various problems.

In the performance of her work, in contacting the physicians who have had occasion to visit the central office at Four Fifty Sutter Building in San Francisco, or who have been accustomed to exchange greetings with her at the annual sessions, Doctor Pope built up a very personal relationship with a host of California Medical Association members.

During the period in which the headquarters office has been in charge of Doctor Pope, the work of the Association has been performed in a quiet, gracious and efficient manner. The general officers particularly will miss her, because they have had special opportunities for more often meeting her and thus better knowing of the manner in which she so well fulfilled her responsibilities.

As she lays down this work, therefore, in which, since the year 1923, she has been engaged, Doctor Pope will take with her the heartfelt thanks and good wishes of all officers and members of the California Medical Association and its component county societies.

DR. FREDERICK C. WARNSHUIS OF MICHIGAN BECOMES THE SECRETARY-TREASURER, AND DIRECTOR OF PUBLIC RELATIONS, OF THE C. M. A.

The Council's Problem in Securing a Successor to Doctor Pope.—"The King is dead, long live the King." So has it always been and so must it ever be. When Doctor Pope requested of the Council its sanction to retire from office, that body was faced with the problem of securing a successor. Section 12 of Article X of the California Medical Association constitution provides that "No person shall be eligible to the office of secretary-treasurer who does not hold the degree of Doctor of Medicine, but membership in this Association [the California Medical Association] shall not be a necessary qualification for the office." This provision was the rule of guidance in seeking for some physician who could efficiently carry on the Association's work as its executive officer. In their quest, the members of the Council took into full consideration the many difficult and unsolved problems which, in recent years, have demanded the earnest attention of organized medicine, with particular reference to California's special needs. It was felt that whoever took up the work should have a background in experience, in aptitude and in capacity that would permit the activities of the Association to go forward without interruption; and, if possible, with even more vigor than in the past. The names of several members of the California profession were first considered, and tentative conversations held with one or more of such colleagues. The Council decided at the same time, however, that it would not limit its search to California physicians, but through a committee would make a survey of possible candidates from medical men who were holding, or had held positions of administrative and executive responsibility in organized medicine in other parts of the United States. This investigation was carried on not only through cor-

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

EMMA W. POPE, M. D.
Retiring Secretary-Treasurer

FREDERICK C. WARNSHUIS, M. D.
Incoming Secretary-Treasurer and Director of Department of Public Relations

respondence, but by means of personal conferences, made conveniently possible at the Cleveland session of the American Medical Association.

* * *

President Toland's Committee Nominates Dr. Frederick C. Warnshuis of Michigan.—The end-result of the search was the submittal at the July Council meeting of a report by President Clarence Toland, who had been appointed chairman of the subcommittee on secretary-treasurer, in which that committee unanimously recommended the election—if his services could be secured—of Dr. Frederick C. Warnshuis of Grand Rapids, Michigan, as Secretary-Treasurer, and Director of Public Relations, of the California Medical Association. The committee's recommendations received the unanimous vote of the members of the Council, and by long-distance telephone Doctor Warnshuis was notified of his election, and his acceptance of the office was received.

The Michigan State Medical Association holds its annual session in September, and because Doctor Warnshuis, as secretary thereof, was responsible for this year's program, and also required opportunity to arrange his personal affairs in Michigan, where he has been in practice for more than thirty years, it was agreed that he should take up the reins of office in California on October 1.

* * *

Former and Present Activities of Dr. Frederick C. Warnshuis.—To members of the medical profession who have maintained an active interest in organized medicine—and this applies to physicians in practically every State in the Union—the name of Warnshuis is very familiar. For, in addition to his many other activities, he has been Speaker of the House of Delegates of the American Medical Association since the year 1921, having been reëlected annually. This fact, alone, may be taken as an index of his great ability and good judgment. Our new secretary-treasurer was born in Alton, Iowa, received his M. D. degree in 1902, and since that year has been in practice in Grand Rapids.

Members of the California Medical Association are naturally interested in this colleague who is to come to the Coast, as a full-time administrative officer, to help our State Association in its work and problems; and because a good understanding is most desirable in taking up duties in a new community or commonwealth, Doctor Warnshuis was persuaded to send to CALIFORNIA AND WESTERN MEDICINE some biographical data, which are subjoined to these comments.

A perusal of the long list of official responsibilities which Doctor Warnshuis has had, and the knowledge that these have come to him because of his efficient service and splendid personality, should convince all that the Council has not only made a wise selection, but one which must appeal to the entire membership of the California Medical Association.

* * *

Doctor Warnshuis was Chairman of the Committee that Brought in the Michigan Survey.—Doctor Warnshuis comes to us at a time when

we are weighted down with serious problems. In the March, 1934, CALIFORNIA AND WESTERN MEDICINE, page 195, were printed some editorial comments on "Michigan's Contribution to the 'Costs of Medical Care,'" suggested by the report, last year, of the Michigan State Medical Society, conceded to be the best State survey that has thus far been made. As then remarked, Doctor Warnshuis was chairman of the committee which made that survey. The California Medical Association Committee of Five, authorized by the House of Delegates at Riverside, will therefore have an able aide in Doctor Warnshuis, as will the Department of Public Relations; Dr. Walter M. Dickie, who was drafted into service when that Department was organized, having resigned.

Without further comment, other than to express upon behalf of the California Medical Association, its component county societies and members, their joint greetings and cordial welcome to Doctor Warnshuis, we print the list of former achievements of our new secretary, hoping and believing that his work, which in Michigan and elsewhere was attended with such success, will bear even greater fruition in his new home on the Pacific Coast.*

A Summary of Biographical Data.—The following biographical data will permit members of the California Medical Association to better visualize the scientific, organization and other work to which Doctor Warnshuis has given so much of his time in the past thirty years, and will enable officers of county medical societies to more readily consult him concerning their own problems:

1905—Treasurer of Kent County Medical Society, Grand Rapids, Michigan.

1906-1911—Secretary of Kent County Medical Society, Grand Rapids, Michigan.

1906-1934—Attending surgeon, Butterworth Hospital, Grand Rapids, Michigan, serving at times as vice-chief and chief of staff, and member of staff, Executive Committee of this hospital.

1906-1934—Visiting surgeon, Blodgett Hospital, Grand Rapids, Michigan.

1910-1919—Chief Surgeon, Père Marquette Railroad and during that period, member of American Railways Chief Surgeons' Association.

1912—President of Kent County Medical Society, Grand Rapids, Michigan.

1912-1918—Member of the Michigan State Board of Registration in Medicine.

1913—Charter-Fellow, American College of Surgeons.

1913-1934—Secretary of Michigan State Medical Society. (1913-1929, secretary-editor of the Michigan State Medical Society. In 1929 relieved of editorial duties.)

1913-1934—Business manager, Journal Michigan State Medical Society.

1918—Author of "Principles of Surgical Nursing." W. B. Saunders Company.

1918—Went overseas as chief of the Surgical Service Base Hospital 99, A. E. F., March, 1919, and became commanding officer of Base Hospital No. 99. Returned from France in July, 1919, with the rank of lieutenant-colonel.

1919-1923—District Surgeon for United States Veterans' Bureau.

1919-1927—Colonel in Medical Reserve Corps. Member of the American Legion.

1919-1934—District Surgeon, Grand Trunk Railway.

1921—Elected Speaker of the House of Delegates of the American Medical Association, and reëlected each year since.

1929-1931—Assumed secretaryship of the Michigan State Board of Registration in Medicine for two years, to supervise its reorganization.

1929-1934—Consulting surgeon, United States Public Health Service.

1930—Vice-president of the American Federation of Examining Boards.

1932—President of the Aero-Medical Association of the United States. Now a member of its board of directors.

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*EDITOR'S NOTE.—Through the courtesy of the Editor of the *Journal* of the Michigan State Medical Society we have received galley proof copy of Doctor Warnshuis' farewell letter which will be printed in the September issue of that publication.

It may be of interest to members of the California Medical Association, and on that account it is here reprinted. The article was taken from the Society's Activity Department of the Michigan *Journal* and has the caption, "Secretary's Valedictory." The text follows:

The following communication was sent to the Council on July 28, 1934, thereby terminating a service of twenty-one and one-half years as Secretary of this Society:

B. R. Corbus, M. D., Chairman,
Council of the Michigan State Medical Society,
Grand Rapids, Michigan.

Dear Doctor Corbus:

I hereby respectfully tender to you and through you to the Council my resignation as Secretary of the Michigan State Medical Society, effective September 15, 1934.

I shall arrange for an audit of the Society's funds and shall be prepared to transfer the funds and all society records on that date to whomsoever the Council designates.

It is not easy to terminate a relationship and relinquish an office that I have served for twenty-two years. I admit feelings mingled with regret and sadness. Fortune's vagaries leave me with no other course to pursue.

I am very grateful and very sincerely appreciative for the confidence and trust reposed in me during these many years. In another communication I shall endeavor to express my gratitude in fuller measure.

Awaiting the Council's instructions and assuring you I shall be helpful to my successor, I am,

Very respectfully,

F. C. WARNSHUIS, *Secretary.*

This was not an easy step to take. A residency and practice in Michigan extending over a period of thirty-two years yielded many friendships and created many relationships that were dearly prized. To sever them and remove oneself from Michigan's environment gives rise to indescribable emotions. The decision was brought about by the attractive tender from the California Medical Association.

In relinquishing office I desire to express my very sincere appreciation for the trust that was reposed in me during these many years. My quest was not to serve one member, or a small group of members, but the entire membership—the Society as a whole.

The faithful discharge of the duties of office received first consideration. My quest at all times was to conserve and advance the membership and Society's interests. The records reveal the degree in which that policy was successful.

The citing of achievements and major activities might be justified, I shall leave such narration to others. There is one plea I should like to leave. Remain loyal to your organization, and maintain sustained interest in and support all of the Society's activities. It is your Society and it will be as valuable to you as you make it.

For my successor I bespeak wholehearted coöperating support. Few realize the tremendous amount of detail, labor and energy that the duties of office demand. Few appreciate the work involved or the time demands that devolve upon the Secretary.

Members should recognize these facts. My successor will stand in need of your helpful and considerate assistance, for during the next year his duties are going to be extremely arduous.

I shall maintain a kindly interest in the Society's future. Its future and its activities will receive my best wishes and so—Good-bye.

F. C. WARNSHUIS.

1930—Member, Planning Committee of White House Conference on Child Welfare; original member and president of Grand Rapids Rotary Club for two years, 1913-1915.

1910-1912—Secretary of the Michigan Automobile Association.

Memberships: Kent County Medical Society; Michigan State Medical Society; Fellow of the American Medical Association; Peninsular Club; Highlands Club; collaborating editor of the American Journal of Surgery; associate editor, Bulletin of the American Medical Association; ex-officio member, American Medical Association Board of Trustees.

A NATUROPATHIC INITIATIVE WILL BE ON THE BALLOT AT THE STATE ELECTION ON NOVEMBER 6

Naturopathic Petition Qualifies — The Chiropractic Petition Does Not.—One of the ten initiative petitions which received more than 110,811 signatures, and which will be on the ballot on November 6, will be the "Naturopathic Act—Initiative." The proposed Chiropractic initiative petition was lacking in some six thousand votes and will not be voted on this year.

* * *

Every Member Should Study the Proposed Initiative Law.—Because it sets up standards of licensure that are woefully out of harmony with modern-day concepts of scientific medicine and public health standards, the prompt and serious attention of all component county societies and members is called to the Naturopathic Initiative, a few of the paragraphs from which are presented on page 213 of this issue. More than 110,000 California citizens have attached their signatures to the lengthy petition, thus making it necessary for the electorate to decide whether it shall be transformed into binding law by vote of the people.

It is not our purpose here to discuss the deplorable features of this new expression of cultist legislation. We can only urge all members of the California Medical Association to read the excerpts to which space is given, and then to draw their own conclusions as to the significance and far-reaching effect of some of the mooted provisions.

* * *

Read Also the Following Critical Comments.—In addition, we ask that every member read what a colleague—who has had an exceptional experience and a broad knowledge of licensure matters—has to say upon the subject. From one of his letters we quote the following:

"This proposed act is evidently modeled after the State Bar Act of California. No act of Legislature can change its provisions. Section 3, paragraph 2, states: 'No law now or hereafter enacted shall in any way qualify, regulate, restrict or prohibit the State Association from fully carrying out and effectuating all of the purposes and provisions herein contained.' The Board of Governors provided in the proposed act are not answerable to any state authority. They will handle their own funds and their own affairs in their own way.

"Read in Section 63 the unlimited license which will be granted thereunder, which license will entitle the holder thereof to 'all rights and privileges of any and all other practicing physicians.'

"Read in Section 2, Subdivision 4, the definition of naturopathy, and then draw your own conclusions as to the varieties of practice which will be permitted under the phrase in Section 41, 'five or more branches of naturopathy.'

"Section 41 indicates that these proposed naturopathic licenses will be easily obtained, because the statement is made therein that any person who is a member of the Naturopathic Association and who has been practicing naturopathy legally or illegally for five years will be eligible for a license for a fee of $25.

"Section 62, Subdivision (e), indicates an intent to dispense narcotics.

"Section 68 prohibits the State Board of Medical Examiners or any other board or agency from granting a drugless practitioner certificate, *i. e.,* this initiative proposes to repeal that portion of the Medical Practice Act which relates to a 'drugless practitioner.'

"Section 67, which exempts the osteopathic act, conflicts with Section 68, because the osteopathic initiative act created a board of examiners with power to administer provisions of the Medical Practice Act, which includes the granting of drugless practitioner certificates. The proposed initiative will take this function from the Board of Osteopathic Examiners.

"Section 67 also exempts the chiropractic initiative; hence, the Board of Chiropractic Examiners will continue to issue licenses to practice chiropractic. Licentiates of said Board of Chiropractic Examiners will be entitled to qualify for naturopathic certificates under the proposed initiative. Confusion will then arise as to jurisdiction. Should the Board of Chiropractic Examiners revoke its license issued to the holder of these dual licenses, the individual can continue to practice under his naturopathic license, and vice versa.

"The initiative is most conflicting, entirely unnecessary, and will further add to the now existing confusion relative to the practice of the healing art in the State of California."

* * *

Laws of Low Standards Are a Reflection on Present-Day Civilization. — After reading the above, and also the excerpts already referred to, it must be evident to every physician who loves his profession, and who is loyal to the standards of scientific medicine, that such a proposed law is an invitation to battle.

If this naturopathic law, among other things,

Made obligatory an adequate preliminary education (consisting, say, of a four-year high school and at least one year of full collegiate work, but with no provision for so-called "equivalent training" that can be made to mean nothing, if an examining board so interprets or decrees), and for a thorough four-year course of professional training; and

If this naturopathic expression of so-called drugless healing really limited itself to that type of healing (instead of including "minor surgery," the term "minor surgery" being evasive because of lack of legal limitations); and

If it did not contain other provisions that are little less than absolutely contrary to those fundamental standards which (in order to give proper protection to citizens) all healing-art groups, in the light of present-day scientific knowledge, should faithfully observe;

Then, indeed, it might perhaps be a matter of only ordinary moment, if this proposed act became a law in California.

There is no objection to any citizen choosing his own healing-art practitioner, but it is supposedly a primary obligation of the State to license, as healing-art practitioners—no matter to what so-called school belonging—only such citizens who have had adequate training and possess knowledge that is not a travesty on modern-day science and civilization.

It is an evidence of the chaotic condition of our present period that legislation is thus seriously proposed which is not only in conflict with the fundamental civic rights of citizens, but which is a distinct step backward from the scientific knowledge which the world today possesses.

FORTHCOMING STATE ELECTION—HOW COMPONENT COUNTY SOCIETIES SHOULD ORGANIZE

Plan of the Los Angeles County Medical Association.—On page 138 of the August CALIFORNIA AND WESTERN MEDICINE will be found a brief article, from the "Bulletin" of the Los Angeles County Medical Association, outlining the manner in which that component county society proposed to keep in touch with legislators and prospective legislation having to do with the public health. What the Los Angeles Association is doing along this line should be likewise done by every other county society in California; and because of the importance of well-planned and united action, the officers and members of each county unit in the State are urgently requested to organize in a manner similar to that described in the article referred to.

For there are probably few things one can do, more meaningless or inconsistent than to indulge in criticism of noxious laws inimical to the standards of public health and scientific medicine when those who make such criticisms fail in their own individual civic professional obligations, through almost complete inaction at the elections of legislators and at the voting upon initiative measures.

* * *

Effective Organization Is Not a Complicated Problem. — It is such a comparatively simple matter to make the influence of members of the medical profession felt during legislative campaigns if a system such as that which is in operation in the Los Angeles and several other county societies in California is put into operation.

The article referred to is worthy of several readings. It is to be hoped, therefore, that at the first meeting of every county society, after this issue of CALIFORNIA AND WESTERN MEDICINE reaches its readers, a report will be made to the members on the status of organization work in their respective districts. If the elected officers of a county unit are laggard or indifferent to their responsibilities in this matter, individual members who wish to do their part should feel free to form a committee, either voluntary or as an adjunct of the Public Health League, so that adequate steps may be taken to contact legislative candidates of their district, to learn the reactions of these legislative and other candidates to public health work; and to carry on an educational campaign of patients, friends, and fellow citizens concerning the real significance of laws such, for instance, as the proposed Naturopathic Act, which is commented upon elsewhere.

* * *

Every Member Should Be Alive to His Responsibilities and Do His Part.—With earnest and united coöperation all things are possible. Some of the issues facing the profession are of most serious import and, if not properly met, may wreck havoc with much that has taken years of loyal endeavor to build up. So read again, if you would earnestly assume your share of these duties, the article on page 138 in the August CALIFORNIA AND WESTERN MEDICINE, and resolve then and there to do your part, and after that proceed, with other colleagues, to do it.

EDITORIAL COMMENT*

FETAL TISSUE IMMUNITY

It is a well established fact that the majority of infants under six months of age are statistically immune to measles, diphtheria, scarlet fever and several other infectious diseases. The conventional explanation of this infantile insusceptibility postulates that it is a passive immunity due to transplacental transmission of maternal antibodies plus their postpartum transfer in colostrum or milk. Like so many conventional plausibilities, however, this theory is not without its paradoxes and inconsistencies. Instances are on record of infants demonstrably immune to scarlet fever or diphtheria, whose mothers are demonstrably susceptible to the same infectious agents.[1] New-born serums occasionally neutralize poliomyelitis virus *in vitro,* the corresponding maternal serums being without demonstrable viruscidal effects.[2] Cutaneous tests show that less than 2 per cent of all children under two months of age are skin-reactive to Staphylococcus aureus vaccine. Fully 95 per cent of all mothers are susceptible to this toxic antigen.[3]

To account for such apparent paradoxes recent theorists have postulated the existence of a nonspecific "fetal tissue immunity" persisting during the earlier months of extra-uterine life. This theory has been apparently confirmed by laboratory studies. Dr. E. L. Burky[4] of Johns Hopkins University, for example, tested rabbits of different ages with highly toxic staphylococcus

* This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

1 Dreyfus-Sée, G.: Arch. d. méd. d. enf., 33:16, 1930.

2 Aycock, W. L., and Kramer, S. D.: J. Exper. Med., 52:457, 1930.

3 Kobak, O. J., and Pilot, I.: Proc. Soc. Exper. Biol. and Med., 28:584, 1931.

4 Burky, E. L.: J. Immunol., 24:127, 1933.

filtrates. He found that new-born rabbits are resistant to at least eight times the intravenous adult M. L. D. per kilogram of body weight. This fetal immunity (or insusceptibility) continues till about the fourth month, when the adult susceptibility begins to be demonstrable. Serum from the apparently immune baby rabbits will not passively immunize (or desensitize) adult rabbits.

Under the assumption that fetal pan-immunity is due to a positive chemical factor in rapidly growing tissues, Doctors McKhann and Chu [5] of Harvard Medical School have sought to isolate this factor for therapeutic study. Aqueous extracts of normal human placentas were separated into albumin and globulin fractions by ordinary fractionation technics. The globulin fraction thus obtained was found to be non-toxic for guinea-pigs and rabbits, and to contain no demonstrable estrus-producing hormone. As little as 0.08 milligram of this globulin neutralized a necrotizing dose of diphtheria toxin as shown by subsequent intradermal guinea-pig tests. The globulin also neutralized poliomyelitis virus *in vitro*. It blanched scarlet fever rash, in many cases the blanching effect being superior to that obtained in a control test with specific scarlet fever antitoxin.

Their most suggestive therapeutic effects, however, were in measles. Fifteen presumably non-immune children, accidentally exposed to this infection, were given intramuscular injections of human placental globulins within five days after exposure. Fourteen of them developed no signs or symptoms of measles. Three presumably non-immune children, similarly exposed, were each given 30 cubic centimeters adult human blood intramuscularly. All three developed modified measles. Two similarly exposed children, who through faulty histories were believed to be immune, were given no treatment. Both developed typical measles.

Stanford University.

W. H. Manwaring,
Palo Alto.

SURGERY OF CHILDHOOD

In the rapid advance of the medical sciences there has been a great tendency toward specialization. Many feel, and probably rightly so, that this has been overdone. However, a high degree of efficiency has been attained in many fields which would not have been otherwise possible. Surgery of infancy and childhood is sufficiently different from adult surgery to warrant special attention. To obtain the best results, the pediatric surgeon must possess a definite understanding of childhood psychology, as well as a knowledge of the diseases of children.

It should be remembered that the surgeon must often approach the sick child in the guise of an enemy. With a shy child, the surgeon should pay little attention to the child at first, but should enter into a general and often irrelevant conversation with the parents or nurse, and finally lead up to the discussion of the patient's difficulty after the child has had an opportunity to "size-up" the surgeon. The child of the extravert type is better approached immediately as the center of attraction. He should be spoken to in a kindly, sympathetic, but manly manner, with an open frankness which will do much to allay any fears and will lead to full coöperation. He should not be told that he will have no pain unless this is true. It is necessary to feel one's way in each individual case, and the type of child must be determined instantly, in order to obtain the proper approach. This is really an art which may be acquired and developed to a high degree, but a thorough understanding of child psychology is also partly inborn. If the surgeon does not have a natural liking for children, he will not be able to gain the child's confidence as readily, or as often, as the surgeon who is especially fond of children. The little patient is usually an excellent reader of the inherent kindness on the part of the surgeon. Spoiled children can best be dealt with in the absence of their parents, and that the psychological problem here is twofold, is evident.

Some of the clearest, clinical histories available can be obtained from a child after the age of six or seven years. A few children will romance about their illness, but an understanding of child psychology will readily enable one to detect this. Many children will give a direct, simple and correct history. All minute details cannot always be elicited, but many can be filled in from the parents. The action, posture, gait, intensity and tone of the cry, or complaints, as observed by the parents, are important points. Children differ in their ability to tolerate pain and discomfort, just as do adults. The small size of the child, allowing for more correct physical findings, is a compensating factor for any lack of detail in the history. Tact and great gentleness must be exercised at the examination.

If the treatment is going to cause more than slight pain, an anesthetic should be administered. The child should never be told that he will not be hurt and then be taken by surprise. If this occurs, he will never trust the surgeon a second time. With some children, it is possible to set broken bones, open abscesses, etc., with local anesthesia, with full coöperation if they are told, not too far in advance, but just before the procedure is carried out, that they will have a little pain, and an explanation be given as to why it is necessary for them to have the pain. Failing coöperation, a light general anesthesia is preferable, because psychic trauma will do the child more harm than a light anesthetic. The lack of responsibility or worries of a child is a great aid in a smooth convalescence. This care-free attitude should not be marred by the child's apprehension or fear of the surgeon, and hence painful treatments should be avoided.

A child will get desperately sick quicker and die, or recover quicker, than an adult with the same disease. This requires alert, correct thinking on the part of the surgeon, who must be able

[5] McKhann, C. F., and Chu, F. T.: J. Infect. Dis., 52:268, 1933.

to make decisions based on experience and accurate observation. Children cannot tolerate prolonged anesthesia or formidable surgical procedure as well as adults. Rough technique, which is undesirable, but may be passable in adult surgery, will more often lead to disaster in children. The chemical and metabolic processes progress with greater speed in children than in adults. They will develop shock, acidosis or other chemical disturbances with amazing speed, and must be watched clinically more closely than adults. Their delicate tissues must be handled with great gentleness, and the best results follow if the surgeon is able to do the operation efficiently and quickly. Close coöperation with pediatrician is essential.

490 Post Street.

LeRoy Brooks,
San Francisco.

BISMUTH TOXIC REACTIONS

At the present time, bismuth ranks equal in importance and frequency of use in the treatment of syphilis, with arsphenamin. Yet the toxic effects and reactions of bismuth are much less frequently discussed, possibly because they are less frequently observed than those of arsenicals, and partly because of the more recent introduction of bismuth into therapeutics. However, with the accumulation of clinical observations, a clearer picture is obtained of the possible toxic effects of bismuth therapy. A good, comprehensive review of the subject is presented by Irgang, Alexander, and Sala of New York (*Archives, Dermatology and Syphilology,* 21:321, 1933).

A number of useful practical observations and clinical deductions are offered. One of them is that the rate of improvement of syphilitic skin lesions, from soluble bismuth preparations, exceeds only by a very slight margin that of the insolubles. In other words, insoluble preparations, having about the same quotient of efficiency should be preferred, being the safer of the two because of the slower absorption. Of the soluble salts, bismuth tartrate is regarded as the most effective; of the insoluble salts, bismuth salicylate. Intravenous administration of bismuth is cautioned against, as being extremely dangerous.

An interesting statement is that small doses are just as effective as large ones, provided the ionization of the bismuth molecule is of sufficient extent. Bismuth is more toxic to the kidneys than to the liver. Unlike arsenicals, bismuth does not tend to aggravate the existing hepatitis. In the presence of impaired renal function, injections of bismuth must be stopped.

With a rising systolic blood pressure over 150 millimeters, and of diastolic above 100 millimeters present, bismuth injections should be discontinued until the functional capacity of kidneys is determined.

The most common complication of bismuth therapy is stomatitis and blue gum line. It was present practically in 100 per cent of cases, the only exception being patients with no teeth at all. In the case of a heavy gum line appearing after a few injections, the dosage should be reduced or treatment stopped. Besides the gingival type, two other types of buccal siderosis may be observed: (1) diffuse, thin, slate-colored pigmentation; (2) localized heavy, bluish-black deposit.

Contrary to the prevailing idea, complications are more frequent with soluble preparations, because they enter the blood stream in a shorter period of time; and since the rate of absorption is greater than that of excretion, there results a greater concentration and accumulation of bismuth in the tissues.

The development of stomatitis, however slight, is a definite indication for discontinuing treatment. In cases of severe stomatitis, sodium thiosulphate should be started from small doses, slowly increasing, since the large doses, liberating large amounts of bismuth from the tissues, may aggravate the symptoms.

Skin manifestations of bismuth intolerance can assume urticarial, eczematous pityriasis rosea-like, and lichen planus pemphygoid types. Paradoxically, and in contradistinction to arsenicals, bismuth eruptions, according to the authors, improve with continuation of injections.

As to the local reactions, which occur mostly in females, water-soluble bismuth preparations produce greater local inflammation and pain. Bismuth salicylate and quinin bismuth iodid (in my experience, also iodobismuthol) proved to be the least irritating locally.

Urinary casts, even in large numbers, are no contraindication to bismuth therapy, provided the kidney function is within normal limits. Total weekly dose of an oil-soluble compound should be about 100 milligrams of metallic bismuth. But 10 per cent suspension of bismuth salicylate in a vegetable oil is the most effective preparation.

1930 Wilshire Boulevard.

Moses Scholtz,
Los Angeles.

Vitamins and Hormones.—Kühnau and Stepp discuss the relations between vitamins and hormones. Recently it has been shown that the animal cell participates in the preparation of vitamins and that the exogenic origin, formerly assumed as self-evident, can no longer be considered a characteristic quality of the vitamins. There are interrelations and transitional states between vitamins and hormones. The knowledge about the interrelations between vitamins and hormones has been advanced by chemical studies and by biologic experiments. It has been found that the relation between fat soluble vitamins and the hormones of the gonads is based on their chemical relationship. The authors illustrate this with structural formulas. They cite biologic observations on the correlations between vitamins A and B, the thyroid and iodin metabolism. Vitamin B influences thyroidal action, and under normal conditions there seems to be a relation between the suprarenal cortex, the thyroid and vitamin B. The authors discuss the influence of vitamins A and E on the sexual functions, the relations between the anterior lobe of the hypophysis and vitamin E, and the synergism of vitamin D and the hormone of the parathyroids.—*Münchener medizinische Wochenschrift.*

CALIFORNIA MEDICAL ASSOCIATION

EMMA W. POPE, M. D., Associate Editor for California

This department contains official notices, reports of county society proceedings and other information having to do with the State Association and its component county societies. The copy for the department is edited by the State Association Secretary, to whom communications for this department should be sent. Rosters of State Association officers and committees and of component county societies and affiliated organizations, are printed in the front advertising section (Adv. pages 2, 4 and 6).

CALIFORNIA MEDICAL ASSOCIATION

CLARENCE G. TOLAND.....President
ROBERT A. PEERS.....President-Elect
EMMA W. POPE.....
Secretary-Treasurer and Associate Editor for California

OFFICIAL NOTICE

Application for Place on the Annual Session Program.—The 1935 annual session, to be held at Yosemite, has been set for May 13 to 16. Members who have papers they wish to present should apply to the secretary of the proper section, by letter, giving a condensed outline of the subject-matter of the proposed paper.

Names of section officers appear regularly on advertising page 4 of CALIFORNIA AND WESTERN MEDICINE.

COUNCIL MINUTES

Minutes of the Two Hundred and Twenty-Seventh Meeting of the Council of the California Medical Association

The following minutes were approved by the Council at its two hundred and twenty-eighth meeting, held at San Francisco, July 28, 1934.

Held in the offices of the Association, Room 2004, 450 Sutter Building, San Francisco, Saturday, May 26, 1934, at 9:30 a. m.

Present.—Doctors Clarence G. Toland, president; Robert A. Peers, president-elect; Edward M. Pallette, speaker; T. Henshaw Kelly, chairman of Council; Councilors W. W. Roblee, H. J. Ullmann, Fred R. DeLappe, A. L. Phillips, Karl L. Schaupp, C. E. Schoff, H. S. Rogers, J. B. Harris, Harry H. Wilson, W. H. Kiger, M. R. Gibbons; Charles A. Dukes, chairman of Committee on Public Relations; Emma W. Pope, secretary; George H. Kress, editor; Walter M. Dickie, director of Public Relations; and Hartley F. Peart, general counsel.

Absent.—Doctors Carl R. Howson (out of State), O. D. Hamlin, and C. O. Tanner.

1. **Call to Order.**—The meeting was called to order by the chairman, T. Henshaw Kelly.

2. **Financial Statement.**—Financial statement for the month of April, 1934, was presented by the secretary and approved as presented.

3. **Annual Meeting Expense.**—The secretary read the report of the chairman of the Arrangements Committee on convention expenses and stated that two of the local churches had been used for meeting places at the Riverside session and that no remuneration had been listed by the Arrangements Committee, as was customary heretofore.

Action by the Council.—On motion of Kress, seconded by Rogers, and unanimously carried, the following resolution was adopted:

Resolved, That Doctor Roblee be requested to present the Association's checks for $50 each to the Universalists Church and the Congregational Church at Riverside on behalf of the California Medical Association in appreciation of their generosity.

A letter was read from the secretary of the Urological Section requesting the reimbursement of $15 expense incurred by that section at Riverside for lantern rental, and personal expenses of an operator. It was stated that sufficient lanterns were owned by the Association to provide one for each section, and that section officers were requested at each meeting to provide for the operation of the lantern by a member of the section. The danger of the establishment of a precedent was discussed.

Action by the Council.—On motion of Schaupp, seconded by Ullmann, and unanimously carried, the following resolution was adopted:

Resolved, That the bill presented by the Urological Section for rental of extra lantern, movie projector, screen and personal expense of an operator at the Riverside session be not allowed.

4. **Publicity Program.**—Full discussion was had of the recommendation of Past President Reinle that the program of publicity started by the Department of Public Relations be continued.

Action by the Council.—On motion of Ullmann, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That a program of publicity be continued.

The necessity of a publicity agent was then discussed, with special reference to the publicity which will cover the work of the Committee of Five.

Action by the Council.—On motion duly made, seconded and unanimously carried, the following resolution was adopted:

Resolved, That the employment of a special publicity agent at $500 per year be discontinued.

5. **Cornish Publicity.**—Correspondence regarding the recent newspaper publicity on the experiments of Robert Cornish was presented and discussed. The secretary stated that since the experiments were carried on at the University of California by a non-medical individual, the Association had no jurisdiction in the matter and the correspondence had been referred to the University of California.

6. **Exhibits at Fairs.**—A letter was read from the director of the Department of Public Relations requesting authorization to install exhibits at the Sacramento and Los Angeles fairs and the use of a portion of the income from the Herzstein bequest to defray the expense.

Action by the Council.—On motion of Gibbons, seconded by Ullmann, and unanimously carried, the following resolution was adopted:

Resolved, That the California Medical Association install exhibits at the Sacramento and Los Angeles fairs and that the expense thereof be paid from the income of the Herzstein bequest.

Doctor Kress spoke of the possibility of gathering photographic data on exhibits from the extensive public health exhibits at the Chicago Fair.

Action by the Council.—On motion of Kress, seconded by Pallette, and unanimously carried, the following resolution was adopted:

Whereas, Several of the constituent state medical units of the American Medical Association maintain yearly public health exhibits at their state and county fairs; and

Whereas, At the Century of Progress International Exposition at Chicago, comprehensive exhibits of the scientific and other progress of medicine are being displayed, which exhibits have great suggestive value

for constituent state and component county medical societies interested in producing and maintaining such exhibits in their respective districts; and

Whereas, The amount of definite informative data on these matters, in the files of the American Medical Association, has not been overgreat; now, therefore, be it

Resolved, That the matter be called to the attention of the House of Delegates of the American Medical Association at the forthcoming Cleveland session, in the hope of securing the endorsement of that House to the plan of having the Board of Trustees of the American Medical Association order the preparation of extensive photographs and other data and information of those exhibits at the Chicago International Exposition, which if duplicated or modified, could be advantageously and economically reproduced or used at exhibits of constituent state and county medical associations; and be it further

Resolved, That the California Medical Association delegates be instructed to present this resolution to the House of Delegates of the American Medical Association for its consideration.

7. **Fillers.** — A letter from the director of Public Relations was presented requesting endorsement by the Council of the plan of the Committee on Public Relations to furnish a series of concise articles to members for use as fillers in monthly bills to patients. The necessity of complete control of such publicity was pointed out as well as the consideration necessary in the preparation of the message.

Action by the Council.—On motion of Kress, seconded by Pallette, and unanimously carried, the following resolution was adopted:

Resolved, That the matter of fillers as contemplated by the Committee on Public Relations be referred to the Executive Committee for further consideration and report.

8. **Membership.**—Correspondence from the San Bernardino County Medical Society requesting that Edwin B. Godfrey be granted associate membership was presented.

Action by the Council.—On motion of Ullmann, duly seconded, the following resolution was adopted:

Resolved, That Edwin B. Godfrey, San Bernardino, be granted associate membership in the California Medical Association.

A request from the Los Angeles County Medical Association for granting of retired membership to a member who is still in practice was presented and was denied on the basis that physicians in active practice are ineligible for retired membership.

Membership data and request of the Ventura County Medical Society for granting of retired membership to W. R. Livingston was presented.

Action by the Council.—On motion of Ullmann, seconded by Phillips, and unanimously carried, the following resolution was adopted:

Resolved, That W. R. Livingston, Camarillo, member of the Ventura County Medical Society, be granted retired membership in the California Medical Association.

9. **Council Meeting.**

Action by the Council.—On motion of Roblee, seconded by Schaupp, and unanimously carried, the following resolution was adopted:

Resolved, That a regular meeting of the Council be held at the office of the Association on the fourteenth day of July, 1934, at the hour of 9:30 o'clock a. m. of said day.

10. **Legal Department.**—The general counsel read a report on the encroachment of business and politics in the field of practice of medicine.

Action by the Council.—On motion of Kress, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That copies of the report of the general counsel be furnished the members of the Council and the five members of the Committee on Health Insurance.

*11. (See footnote.)

*12. (See footnote.)

*13. (See footnote.)

*14. (See footnote.)

15. **Hospital Service Plan.**—The secretary presented a statement of $2,500 for services rendered by the general counsel during the past two years in connection with the hospital service plan for the Alameda County Medical Association and including fee to be paid Professor Ballentine of the University of California for opinion rendered and fee for advisory legal services rendered by Mr. Truax of Los Angeles.

Action by the Council. — On motion of Gibbons, seconded by Ullmann, and unanimously carried, the following resolution was adopted:

Resolved, That said statement be approved as rendered and that the secretary be and is hereby authorized to pay the same.

*16. (See footnote.)

*17. (See footnote.)

18. **Auditing Committee.**—The chairman announced that he had appointed Karl L. Schaupp (chairman), O. D. Hamlin, and Morton R. Gibbons as members of the Auditing Committee. The appointments were approved by the Council.

19. **Committee on Physical Therapy.** — The chairman stated that in accordance with councilor action he had reappointed the present members of the Committee on Physical Therapy: Doctors John S. Hibben (chairman), Rodney Atsatt, H. Leslie Langnecker, Charles Lowman, and Howard C. Naffziger.

20. **Committee to Parallel Studies of Senate Interim Committee.**—It was brought to the attention of the Council that a member of last year's Council Committee to parallel studies of the Senate Interim Committee had resigned at the annual session. The Council felt that since appointment of the Committee of Five on Health Insurance had been made, there was no further need for the continuance of last year's committee.

Action by the Council.—On motion of Kress, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That inasmuch as a new Committee on Health Insurance had been appointed, the committee appointed last year by the Council to parallel the studies of the Senate's Interim Committee be discontinued.

21. **Basic Science Act.** — Doctor Kress reported briefly on the proposed basic science initiative and stated that in 1929 a bill had been prepared.

Action by the Council.—On motion of Kress, seconded by Rogers, and unanimously carried, the following resolution was adopted:

Resolved, That a Basic Science Bill be drafted by the chairman of the Committee on the Basic Science Act and the chairmen of the subgroups and that it be submitted to the Council prior to the next session of the legislature with a view of presenting it to the legislature.

22. **Coöperation with Board of Medical Examiners.** Resolution No. 1, adopted by the House of Delegates, requesting that the Association coöperate with the Board of Medical Examiners, was presented. It was stated that no definite action was at present necessary since the Association has always aided the Board in any manner that was proper and fit in the opinion of the Board and the Council of the Association.

23. **Use of County Hospitals.** — Resolution No. 3, directing the Council to use the resources of the Association to the end that county hospitals be maintained and conducted within the limits of the law, was presented, and discussed.

24. **Emergency Relief.**—Resolution No. 5, recommending the appointment of a Committee of Three on Emergency Relief was discussed. It was stated by the Speaker of the House that the committee appointed consisted of Doctors Harry H. Wilson (chairman), T. Henshaw Kelly, and Karl L. Schaupp.

25. **Amendments to the Medical Practice Act.**—Resolution No. 7, recommending amendments to the Medical Practice Act re appeals from decisions of the Board of Medical Examiners in revocation proceedings and extension of causes constituting unprofessional conduct, was discussed.

Action by the Council.—On motion of Gibbons, seconded by Ullmann, and unanimously carried, the following resolution was adopted:

Resolved, That a committee be appointed to bring in a report thereon to the Council at or prior to the fall meeting.

26. **Health Insurance Committee.**—The chairman stated that, in accordance with the resolution of the House of Delegates, the Speaker had appointed as members of the Health Insurance Committee, Doctors Alson Kilgore of San Francisco, William R. Molony, Sr., of Los Angeles, and Rodney Yoell of San Francisco, and that the chairman of the Council had appointed Harry H. Wilson of Los Angeles and Robert A. Peers of Colfax.

A letter from the San Francisco County Society requesting that they be informed of the personnel of the committee and of the progress of the committee was read. The secretary was instructed to reply to the letter.

27. **Radio Broadcasts.**—Resolution No. 9, regarding the establishment by the Council of proper rules of professional conduct for physicians appearing on radio broadcasts, was presented.

Action by the Council—On motion of Kress, seconded by Wilson, and unanimously carried, the following resolution was adopted:

Resolved, That Resolution No. 8 be referred to the Committee on Public Relations for consideration and report.

28. **Practice of Radiology and Pathology in Hospitals.**—Resolution No. 10, directing the Council to appoint a special committee of five to contact western hospital associations and to study relations between each hospital's pathology and radiology department and the pathologist and radiologist in charge, was discussed.

Action by the Council.—On motion of Pallette, seconded by Ullmann, and unanimously carried, the following resolution was adopted:

Resolved, That the Committee on the Practice of Radiology and Pathology in hospitals be appointed by the chairman of the Council.

The chairman of the Council named Charles A. Dukes (chairman), Morton R. Gibbons, Henry J. Ullmann, A. H. Zeiler, and L. S. Goin to serve as members of the committee.

29. **Fee Schedule for X-Ray Work.**—Resolution No. 12, regarding the dual fee schedule for x-ray work for the Industrial Accident Commission, was discussed.

Action by the Council.—On motion of Ullmann, seconded by Peers, and unanimously carried, the following resolution was adopted:

Resolved, That a committee on the x-ray fee schedule be appointed by the chairman of the Council to consider the subject and report thereon.

The chairman named Doctors George G. Reinle (chairman), Morton R. Gibbons, Philip Stephens, Louis Packard, and Barton Powell, Sr., to serve as members of this committee.

30. **Press and the Medical Profession.**—Resolution No. 13, directing the Council to take such action as would create a more sympathetic understanding between the press and the medical profession, was discussed and on motion of Wilson, seconded by Schaupp, and unanimously carried, the following resolution was adopted:

Resolved, That the problem of relationship of the press and the medical profession be referred to the Committee on Public Relations.

31. **Advertising in Journal.**—The secretary presented a report on advertising in the JOURNAL, stating that the total advertising for the first four months of 1934 amounted to $7,560.25 as compared with $7,328.96 during the first four months of 1933; that three new one-quarter page advertisements had been secured to run for one year, commencing with the April issue, and one one-quarter page, commencing with the June issue.

32. **Journal Costs.**—A letter was read from the James H. Barry Company, publishers of the JOURNAL, stating that the costs of publication, both as to stock material and labor, had been increased during the past year because of the NRA codes, and asking that an increase in price in such amount as the Association may see fit be allowed. The editor and other members of the Council commented on the excellent mechanical set-up of the JOURNAL and the splendid coöperation of the Barry Company, who had been the printers of the official JOURNAL from the time it was founded. It was felt that Doctor Kress should discuss the matter with the Barry Company and report thereon.

Action by the Council.—On motion of Schaupp, seconded by Phillips, and unanimously carried, the following resolution was adopted:

Resolved, That Doctor Kress be delegated to contact the Barry Company and submit a report to the Executive Committee, which shall have power to act.

33. **Exchange Copies of Journal.**—A request was read from the Minnesota Medical Society for an additional exchange copy of CALIFORNIA AND WESTERN MEDICINE for use by the Committee on Medical Economics.

Action by the Council.—On motion of Kress, seconded by Ullmann, and unanimously carried, the following resolution was adopted:

Resolved, That the request of the Minnesota Medical Society for an additional exchange copy of the JOURNAL be granted, provided a copy of the Minnesota State Journal is sent President Toland in return.

34. **Sales Tax on California and Western Medicine.** A letter was read from the Barry Company regarding the State Sales Tax and the possibility of exemption on the basis of a scientific publication. The letter was referred to Mr. Peart for reply.

35. **Reprint of Journal Article.**—Doctor Kress stated that Dr. Roscoe Grey, medical director of the Aetna Company, had asked permission to reprint the article by Senator Ralph E. Swing, "Malpractice—As an Attorney Sees It," which was published in the April issue of the JOURNAL, and that he had granted the request. No objection.

36. **Lawyers' Club.**—The reply of the general counsel to a letter and resolution of the Lawyers' Club of Los Angeles, which proposed federal relief for professional men, was read. The letter was placed on file.

37. **Fees of Cultists.**—Correspondence from a Los Angeles physician and the Board of Medical Examiners, regarding fee paid to a cultist, was read. No action taken.

38. **Public Relations Committee.**—Doctor Toland announced that the Committee on Public Relations had met and elected Doctor Dukes chairman of the Committee on Public Relations, subject to the approval and confirmation of the Council.

Action by the Council.—On motion of Ullmann, duly seconded, and unanimously carried, the following resolution was adopted:

Resolved, That the election of Charles A. Dukes as chairman of the Committee on Public Relations by said committee be approved.

39. **Resolution of Appreciation.**—The secretary presented the resolution of appreciation of the Association's coöperation, which was adopted by the Woman's Auxiliary at Riverside.

Action by the Council.—On motion of Rogers, seconded by DeLappe, and unanimously carried, the following resolution was adopted:

Resolved, That the resolution of appreciation adopted by the Woman's Auxiliary be accepted with thanks.

40. **Membership in Association.**—Doctor Ullmann raised a question on the present status of a member residing and practicing in Ventura County, who had been admitted to membership in the Los Angeles County Medical Association.

Doctor Wilson stated that after reviewing the circumstances, the Los Angeles County Medical Association had decided that the physician's election had taken place through misunderstanding of the geographical status and that if the physician could not be legally elected a member of the Los Angeles County Medical Association, the said membership would naturally be abrogated.

41. **State Emergency Relief.** — Doctor Kelly stated that he had been contacted by the office of the State Emergency Relief and had advised Mr. Roy Pilling, director of Profession and Technical Service, that a committee of three had been appointed to handle the whole problem of emergency relief. The scope and powers of the committee were then discussed, and it was stated that the committee should have power to appoint advisory members if desired.

Doctor Wilson read a proposed plan of medical relief in conjunction with the Federal Emergency Relief in California.

Action by the Council.—On motion of Pallette, seconded by Toland, and unanimously carried, the following resolution was adopted:

Resolved, That the Council approve in principle the statements made and that the Committee of Three be authorized to take any steps necessary to carry out the plan with power to act.

42. **Department of Public Relations.** — Discussion was had of the work of the Department of Public Relations. Doctor Toland outlined the work contemplated for the next year as discussed in the meeting of the Committee on Public Relations held today.

43. **Recess.**—At this point a recess of the Council was taken for luncheon.

* * *

44. **Call to Order.**—The chairman called the meeting to order after the recess.

Present.—Doctors Ullmann, Phillips, Rogers, Harris, Pallette, Schoff, Dukes, Peers, Roblee, Kiger, Kress, Toland, Wilson and Kelly, and General Counsel Peart.

Absent.—Doctors Gibbons, Schaupp, Hamlin, Howson, DeLappe, Tanner, and Pope.

The chairman, with the consent of the members of the Council, asked Doctor Ullmann to serve as secretary of the meeting.

The chairman of the Council stated that for some time he had had conversations with the secretary-treasurer and that she had continued to serve as secretary-treasurer to carry out the wishes of the Council, and he then presented a letter of resignation on her behalf as follows:

"San Francisco, California.
"May 26, 1934.

"To the Council of the California Medical Association:
"Gentlemen:

"Realizing that the activities inaugurated at the recent House of Delegates meeting will require a type of public service different from that required of the secretary-treasurer of the California Medical Association heretofore, and to which I am by nature unsuited, I herewith submit my resignation as secretary-treasurer of the California Medical Association to be accepted by the Council at such time as it may see fit.

"Very truly yours,
"(Signed) Emma W. Pope."

Doctor Dukes stated at this point that the director of the Department of Public Relations had conferred with him and had requested him to present the following letter to the Council:

"San Francisco, May 26, 1934.

"To the Council of the California Medical Association:
"Gentlemen:

"I hereby tender my resignation as Director of the Department of Public Relations of the California Medical Association to take effect at such time as the Council see fit.

"Yours very truly,
"(Signed) Walter M. Dickie."

General discussion was had of the situation of the Association, with particular reference to pending economic and political problems faced by the profession. The advisability of obtaining a physician especially fitted for public activities of varied kinds and in various places in addition to the necessary work in the offices of the Association to serve as executive officer, was discussed and after full consideration of the matter the following resolution was offered by Doctor Toland and seconded by Doctor Pallette:

Whereas, The secretary-treasurer and the director of the Department of Public Relations have presented resignations to the Council to take effect at the pleasure of the Council; and

Whereas, The problems confronting the medical profession and the California Medical Association today are such that it may be necessary to have as an executive officer of the Association a physician capable of a variety of public activities and travel about the State, in addition to the work in the office of the Association; and

Whereas, The selection of such a qualified physician will require considerable investigation and may require some time; therefore, be it

Resolved, That the Council express its deepest thanks to Dr. Emma W. Pope for her long, efficient and loyal service as secretary-treasurer and to Doctor Dickie for his like service as director of the Department of Public Relations, and that the Council request them to continue to serve the California Medical Association in their respective positions until such time as a determination of personnel requirements is arrived at; and be it further

Resolved, That a Committee of Three be appointed by the chairman to survey the United States to find the most suitable physician of requisite experience and ability to serve the California Medical Association in the conjoint position of secretary and director of the Department of Public Relations.

After full discussion the resolution was unanimously adopted.

The Council named Doctors Toland, Harris, and Dukes to serve on this committee.

44. **Committee of Five.**—Discussion was had of the name of the Committee of Five created by the House of Delegates, which is to study health insurance.

Action by the Council. — On motion of Pallette, seconded by Dukes, the following resolution was adopted:

Resolved, That the said committee be requested to select its own name and to report to the Council.

45. **Adjournment.**—There being no further business, on motion of Dukes, seconded by Toland, the meeting adjourned.

T. Henshaw Kelly, *Chairman.*
Emma W. Pope, *Secretary.*

* * *

Minutes of the Two Hundred and Twenty-Eighth Meeting of the Council of the California Medical Association

Held in the offices of the California Medical Association, Room 2004, 450 Sutter Street, San Francisco, Saturday, July 14, 1934, at 9:30 a. m.

Present.—Doctors Robert A. Peers, president-elect; T. Henshaw Kelly, chairman of Council; Councilor W. W. Roblee; Secretary Emma W. Pope; and General Counsel Hartley F. Peart.

Absent.—Doctors Clarence G. Toland, president; Edward M. Pallette, speaker; Councilors C. O. Tanner, Carl R. Howson, H. J. Ullmann, Fred R. DeLappe, A. L. Phillips, Karl L. Schaupp, O. D. Hamlin, C. E. Schoff, Henry S. Rogers, J. B. Harris, Harry H. Wilson, W. H. Kiger, M. R. Gibbons;

* Minutes 11, 12, 13, 14, 16, and 17 refer to matters still under consideration by the Council. Publication will be made in due time.

George H. Kress, editor; Charles A. Dukes, chairman of Committee on Public Relations.

1. **Call to Order.**—The meeting was called to order by the chairman, T. Henshaw Kelly. A quorum was not present.

Thereupon, on motion duly made, seconded and unanimously carried, the meeting was adjourned until July 28, 1934, at 9:30 o'clock a. m.

T. Henshaw Kelly, *Chairman.*
Emma W. Pope, *Secretary.*

* * *

Minutes of the Adjourned Two Hundred and Twenty-Eighth Meeting of the Council of the California Medical Association

Held in the offices of the California Medical Association, Room 2004, 450 Sutter Street, San Francisco, Saturday, July 28, 1934, at 9:30 a. m.

Present.—Doctors Clarence G. Toland, president; Robert A. Peers, president-elect; Edward M. Pallette, speaker; T. Henshaw Kelly, chairman of Council; Councilors W. W. Roblee, C. O. Tanner, Carl R. Howson, H. J. Ullmann, Fred R. DeLappe, A. L. Phillips, Karl L. Schaupp, Henry S. Rogers, Junius B. Harris, Harry H. Wilson, W. H. Kiger; Charles A. Dukes, chairman Committee on Public Relations; Emma W. Pope, secretary; George H. Kress, editor; and Hartley F. Peart, general counsel.

Absent.—Doctors O. D. Hamlin, M. R. Gibbons, and C. E. Schoff.

1. **Call to Order.**—The meeting was called to order by the chairman, T. Henshaw Kelly.

*2. (See footnote.)

3. **Minutes of the Council.**—A letter was presented from Doctor Kress regarding approval of Council minutes. It was suggested that the approval of minutes be secured by mail so that publication could be made in the Journal shortly after the meeting.

Action by the Council.—On motion of Kress, seconded by Howson, and unanimously carried, the following resolution was adopted:

Resolved, That the first draft of minutes be sent to the president, president-elect, speaker, chairman of the Council, chairman of the Executive Committee, and the editor, by the secretary, as authorized by previous councilor action; that the revised draft be then sent to all members, who shall immediately send their approval thereof or any suggestions thereon to the office of the secretary; and that the chairman be authorized to submit the minutes to the editor within seven days following the mailing of same to Council members for publication in the Journal.

Minutes of the two hundred and twenty-seventh meeting of the Council were presented for approval.

Action by the Council.—On motion of Peers, seconded by Dukes, and unanimously carried, the following resolution was adopted:

Resolved, That the minutes of the two hundred and twenty-seventh meeting of the Council, as mailed to all councilors, be approved.

It was agreed that in publication of the minutes of the two hundred and twenty-seventh meeting of the Council, publication of certain items dealing with status of members should be deferred until final action was had.

4. **Organization Meeting of the Committee of Five.** Doctor Wilson stated that a second meeting of the committee had been held and the reports of individual members on personnel for the study had been considered and that Gordon S. Watkins, professor of economics of the University of California at Los Angeles, would act as consulting economist and that Paul A. Dodd, assistant professor of economics of the University of California at Los Angeles, would conduct the survey; that a tentative budget covering the first six months had been worked out and that consideration was at present being given to assistance offered by the State Emergency Relief Administration in the matter of field workers.

Action by the Council.—On motion of Wilson, seconded by Ullmann, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the committee as submitted by Doctor Wilson be adopted and the committee be authorized to make such arrangements as are necessary to carry out the survey along the lines indicated.

Further action by the Council.—On motion of Schaupp, seconded by Rogers, and unanimously carried, the following resolution was adopted:

Resolved, That the chairman of the Council and the secretary be authorized to execute any contracts or agreements compatible with the preceding resolution, necessary to insure that the work of the Committee of Five be carried on.

5. **Financial Statement.**—Financial statement for the month of May, 1934, was presented by the secretary and on motion of Schaupp, seconded by Ullmann, was approved.

6. **Membership.**—A request from the Sonoma County Society for the granting of retired membership to one of its members was received.

The secretary was instructed to call the attention of the Sonoma County Society to Article IV, Section 1c of the Constitution, which makes it obligatory that physicians shall have been active members of the Association for ten years prior to the granting of retired membership and which precludes the granting of retired membership in the case requested. It was suggested that the Sonoma County Society's attention be called to the fact that the member would be eligible for retired membership next year.

7. **Articles in Journal.**—Doctor Kress presented a letter addressed to a member of the Association regarding publicity in the Journal.

Action by the Council.—On motion duly made, seconded and carried, the following resolution was adopted:

Resolved, That the letter of the editor be approved.

Doctor Kress presented an article which had been submitted for publication under the Department of Public Relations column, which he believed contained undesirable propaganda and on which he had withheld publication.

Action by the Council.—On motion of Toland, seconded by Dukes, and unanimously carried, the following resolution was adopted:

Resolved, That the action of the editor be approved.

8. **Complimentary Copy of Journal.**—The editor presented a request from the Science Museum of London that they be placed on the complimentary list of California and Western Medicine.

Action by the Council.—On motion of Pallette, seconded by Ullmann, and unanimously carried, the following resolution was adopted:

Resolved, That the request of the Science Museum Director to be placed on the complimentary mailing list of the Journal be granted.

9. **Journal Costs.**—Doctor Kress stated that, in accordance with the action of the Council, he had taken up the question of cost of publication of the Journal with the James H. Barry Company. Doctor Kress stated that since the inauguration of the NRA codes the cost of publication had been increased materially, both as to material and labor, and that after a thorough review of all angles of the problem, he considered an increase of $100 per month on the base price fair.

Action by the Council.—On motion of Kress, seconded by Rogers, and unanimously carried, the following resolution was adopted:

Resolved, That the base cost price of printing the Journal be increased by $100 per month, provided that

at the end of six months a resurvey of the question be made and a report made to the Executive Committee or the Council for consideration.

The general counsel brought up the question of the State Sales Tax on JOURNALS sold.

*10. (See footnote.)

*11. (See footnote.)

12. **Date of Annual Session.**—Discussion was had of the date of the next annual session to be held at the Yosemite National Park.

Action by the Council.—On motion of Pallette, seconded by Dukes, and unanimously carried, the following resolution was adopted:

Resolved, That the date of the next annual session be set as May 13, 14, 15, and 16, 1935.

13. **Emergency Relief.** — A questionnaire was presented from the American Medical Association relating to federal emergency relief.

Action by the Council. — On motion of Pallette, seconded by Phillips, and unanimously carried, the following resolution was adopted:

Resolved, That the questionnaire be referred to the Committee on Emergency Relief for reply.

14. **Hospital Service Forms.**—The request of the San Francisco Hospital Conference for copies of the forms prepared for the Mutual Hospitals-Alameda County was presented. Full discussion of the matter of distribution of the forms was then had.

It was felt that all requests for forms should come from the county medical societies, who could then control any publicity thereon.

Action by the Council.—On motion of Dukes, seconded by Pallette, and unanimously carried, the following resolution was adopted:

Resolved, That the San Francisco County Medical Society be given copies of the forms prepared for the Mutual Hospitals-Alameda County and that all future requests be acted on individually.

*15. (See footnote.)

16. **Compensation Cases.** — The chairman read a resolution which had been presented by the Alameda County Medical Association dealing with compensation cases.

Action by the Council.—On motion of Dukes, seconded by Tanner, and unanimously carried, the following resolution was adopted:

Resolved, That the resolution be referred to the legal counsel.

17. **Woman's Auxiliary.** — A letter was presented from the retiring president of the Woman's Auxiliary suggesting that the Council outline a policy and program for the Auxiliary.

Action by the Council.—On motion of Pallette, seconded by Toland, and unanimously carried, the following resolution was adopted:

Resolved, That the letter from the retiring president of the Woman's Auxiliary be referred to the Committee on Associated Societies and Technical Groups.

18. **Illness of Doctor Cushman.**—Doctor Harris informed the Council that Dr. Ruggles A. Cushman was to be operated on during the following week.

Action by the Council.—On motion of Ullmann, seconded by Schaupp, and unanimously carried, the following resolution was adopted:

Resolved, That a telegram be sent to Dr. Ruggles A. Cushman expressing the sympathy of the Council and that Doctor Harris be delegated to deliver in person a letter conveying the Council's deep regret on Doctor Cushman's illness and wishing him a speedy recovery.

19. **Secretary-Treasurer and Director of Department of Public Relations.**—Clarence Toland reported on the contact made by the Committee of Three appointed by the Council to survey the United States to find the most suitable physician of requisite experience to fill the office of secretary-treasurer and director of Public Relations.

A letter from F. C. Warnshuis, secretary of the Michigan State Society, was read, and the whole question was discussed in detail.

Action by the Council. — On motion of Pallette, seconded by Ullmann, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the committee be accepted with thanks and its recommendations be accepted and that the Council offer the secretary-treasuryship and the directorship of the Department of Public Relations to Dr. Frederick C. Warnshuis of Grand Rapids, Michigan, at a salary of $10,000 a year, commencing October 1, 1934.

20. **Resolution of Thanks to Doctors Emma W. Pope and Walter M. Dickie.**—On motion duly made, seconded and unanimously carried, the following resolution was adopted:

Whereas, The secretary-treasurer and the director of the Department of Public Relations have submitted resignations to take effect at the pleasure of the Council; and

Whereas, The Council by previous resolution requested them to continue to serve the Association until a determination of personnel requirements were arrived at; and

Whereas, They have loyally consented to do so and have so served; and

Whereas, Doctor F. C. Warnshuis has accepted an offer to serve the Association in the dual capacity of secretary-treasurer and director of the Department of Public Relations; therefore, be it

Resolved, That the Council of the California Medical Association accept the resignation of the secretary-treasurer, Emma W. Pope, M. D., and of the director of the Department of Public Relations, Walter M. Dickie, M. D., to take effect September 30, 1934; and be it further

Resolved, That the Council express to Emma W. Pope, M. D., its heartfelt thanks for her long, capable, and loyal service as secretary-treasurer of the California Medical Association and its deep personal affection for herself; and be it further

Resolved, That the Council express to Walter M. Dickie, M. D., its appreciation of his effective and loyal work as director of the Department of Public Relations, as well as the high regard it holds for him.

21. **Clinical Laboratories.**—Doctor Rogers brought up the question of standardization and inspection of clinical laboratories throughout the State.

Action by the Council.—On motion of Ullmann, seconded by Phillips, and unanimously carried, the following resolution was adopted:

Resolved, That the question of the inspection and standardization of clinical and x-ray laboratories throughout the State be referred to the Department of Public Relations, and the general counsel to draft a tentative bill therefor and to report thereon to the Council at the September meeting.

*22. (See footnote.)

23. **Antivivisection Law.**—Doctor Toland stated that he had discussed the vivisection acts with men representing about ten different states and that he was very much impressed with the act of Omaha, Nebraska. Doctor Toland then read a copy of the Act, which was filed.

24. **Date of Council Meeting.**—Discussion was had of the date of the next meeting of the Council and on motion duly made, seconded and carried, the matter was referred to the Executive Committee with power to act.

25. **Adjournment.**—There being no further business, the meeting adjourned.

T. HENSHAW KELLY, *Chairman.*
EMMA W. POPE, *Secretary.*

* Minutes 2, 10, 11, 15, and 22 refer to matters still under consideration by the Council. Publication will be made in due time.

COMPONENT COUNTY MEDICAL SOCIETIES

HUMBOLDT COUNTY

The Humboldt County Medical Society held its regular July meeting on the 19th at the Humboldt County Tuberculosis School.

Dr. P. H. Pierson of San Francisco held a *Clinic on Tuberculosis* during the day, to which many members brought patients for diagnosis and information.

After dinner, furnished by the nurses at the school, Doctor Pierson discussed *Diseases of the Chest,* using many roentgen photographs to illustrate his remarks. The paper was followed by an interesting discussion.

An invitation by Doctor Stegeman to hold the August meeting at Crescent City was unanimously accepted. Dinner at the Knapp Hospital will be followed with a paper by an Oregon physician. The date of the meeting was set for August 16.

* * *

The Humboldt County Medical Society met on the evening of August 16 in Crescent City, Del Norte County, as the guests of the Knapp Hospital, with Doctor Stegeman as chairman.

Twenty-six doctors attended the meeting, the majority driving ninety miles, and arriving in time for a seven o'clock dinner, served at the hospital.

Dr. James Hayes of Medford, Oregon, spoke on *Fractures of the Long Bones,* and Dr. George K. Rhodes of San Francisco talked on *Drainage of the Abdomen and Traumatic Injuries to the Abdomen.* These papers well repaid the members for attendance, and the speakers expressed themselves as very much satisfied with their reception and entertainment.

LAWRENCE A. WING, *Secretary.*

SOLANO COUNTY

The July 10 meeting of the Solano County Medical Society was held at the Napa Country Club, in conjunction with the members of the Napa County Medical Society.

At 1 p. m. the members of both societies, with several members of the medical staff of the Naval Hospital at Mare Island, participated in an impromptu golf tournament at the Country Club in Napa. Following this an informal gathering, with refreshments, was held at the clubhouse.

At 7 p. m. forty-five members of both societies, with invited guests, sat down to dinner in the main dining room of the clubhouse. Dr. Fred Heegler of Napa acted as master of ceremonies, introducing guests of the evening and calling on several for short remarks.

Following the dinner the members of both societies were joined by a large number of Napa and Solano County dentists and nurses to enjoy the address given by Dr. Karl Myer, professor of bacteriology at the University of California Medical School. Doctor Myer chose as his topic the very timely subject, *Poliomyelitis,* which he illustrated with a motion picture, stressing treatment of this disease. This paper was one of the most interesting ever delivered before the members of these two societies.

The next meeting of the Solano County Medical Society will be held the first Tuesday evening in September, at which time the members will be hosts to the members of the Solano County Bar Association. At this meeting the discussion will be confined to medical and legal aspects of interest to both professions.

AMBROSE J. RYAN, *Secretary.*

CHANGES IN MEMBERSHIP

New Members (12)

Humboldt County.—Francis M. Stump.

Los Angeles County.—Stanley Anderson, Everett W. DeLong, LeGrande Hall, Paul M. Hamilton, Paul E. McMaster, Charles Stein.

Orange County.—Edmund F. Cain.

San Bernardino County.—Daniel Beltz, George E. Noggle.

San Diego County.—Andrew J. Hoefer.

San Mateo County.—J. Garwood Bridgman.

Resigned (1)

William A. Alton, from San Diego County.

In Memoriam

Bell, Harry Dudley. Died at Oakland, August 4, 1934, age 56. Graduate of Cooper Medical College, San Francisco, 1904, and licensed in California the same year. Doctor Bell was a member of the Alameda County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

Dillon, G. Parker. Died at Sacramento, July 17, 1934, age 62. Graduate of the Wayne University College of Medicine, Detroit, 1896. Licensed in California in 1904. Doctor Dillon was a member of the Sacramento Society for Medical Improvement, the California Medical Association, and a Fellow of the American Medical Association.

✝

Francis, Loftus Harley. Died at Cotati, July 27, 1934, age 75. Graduate of California Eclectic Medical College, Los Angeles, 1897, and licensed in California the same year. Doctor Francis was a retired member of the Sonoma County Medical Society, the California Medical Association, and the American Medical Association.

✝

Hart, Trusten Mitchell. Died at Los Angeles, July 14, 1934. Graduate of the University of California Medical School, San Francisco, 1911, and licensed in California the same year. Doctor Hart was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

McMullin, Smith. Died at San Francisco, August 9, 1934, age 69. Graduate of the Kansas Medical College, Topeka, 1900. Licensed in California in 1901. Doctor Smith was a member of the Yuba-Sutter County Medical Society, the California Medical Association, and the American Medical Association.

✝

Queirolo, Caesar A. Died at Oakland, July 18, 1934, age 68. Graduate of the Universite de Geneve Faculte de Medecine, Switzerland, 1897. Licensed in California in 1898. Doctor Queirolo was a member of the Alameda County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

Utley, Jay Hathaway. Died at Beverly Hills, July 12, 1934, age 76. Graduate of Bellevue Hospital Medical College, 1883. Licensed in California in 1884. Doctor Utley was an honorary member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✝

Wheeler, Ernest Paul. Died at Selma, July 27, 1934, age 56. Graduate of the State College of Physicians and Surgeons, Indianapolis, 1907. Licensed in California in 1923. Doctor Wheeler was a member of the Fresno County Medical Society, the California Medical Association, and the American Medical Association.

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

MRS. PHILIP SCHUYLER DOANE .....President
MRS. ELMER BELT.....Editor and Chairman of Publicity

Woman's Auxiliary National Convention—Its Highlights†

A Letter from the President of the California Auxiliary

Dear Auxiliary Members:

The twelfth annual meeting of the Woman's Auxiliary to the American Medical Association was held from June 11 to 16 in Cleveland. The Carter Hotel, our headquarters, provided adequate space for all of our meetings, conferences, exhibits, and registration, on the mezzanine floor and also in the suites of President Blake and President-Elect Tomlinson. The arrangement was eminently satisfactory, and added greatly to the convenience of everyone.

On Sunday, the 10th, large numbers of out-of-town members and guests arrived. The members of the Registration Committee, under the able direction of Mrs. Eben Carey of Wisconsin, were most courteous and opened their booth to begin work in earnest, although official registration was not scheduled to commence until the following day.

There is no organized Woman's Auxiliary in the state of Ohio. The task of arranging for the hospitality and entertainment of Auxiliary members and guests, therefore, was given over to a group of Cleveland women, headed by Mrs. Clyde L. Cummer, wife of the president of the Ohio State Medical Association. Mrs. Cummer proved herself a superlative convention chairman. Her committees, made up entirely of Cleveland women, were well organized, most efficient and most gracious.

Our national president, Mrs. James Blake, greeted members on Sunday afternoon in a charming manner. She made everyone feel most welcome, and expressed her own personal appreciation of the effort that had been made by each one to be present at the convention.

Conferences were held Sunday evening, following an informal supper in Mrs. Blake's suite, of the members of the national board who had arrived in Cleveland.

Monday an all-day session of the board was held—the pre-convention board meeting. Mrs. Blake made a short report, followed by the reading of the minutes of the mid-year board meeting. Announcements were made, and then came the reports of the chairmen of the standing committees which, in most cases, were followed by recommendations of the chairmen. These recommendations were, in the main, approved and referred to the delegates for final adoption. Interesting discussions on matters of policy added color to this part of the program.

The president then appointed the chairman and two members of the Nominating Committee, and the remaining six members of this committee were balloted for. The procedure is for the chairman of each Standing Committee to nominate one member of her committee, after which a ballot is taken for the election of six women to serve with the three already appointed. Mrs. Percy was elected, and Mrs. Doane was appointed by Mrs. Blake, which gave California two members on the Nominating Committee.

The revisions report was the last one to be taken up; and after considerable discussion it was agreed unanimously to table it. This means no new constitution or by-laws for at least another two years, as the Revisions Committee may or may not present another set for action at the next annual meeting.

Following adjournment of this pre-convention meeting, the outstanding Auxiliary social function took place: a delightful dinner given in honor of the past presidents. This affair was largely attended. Mrs. Willard Bartlett of Missouri graciously presided, read telegrams from Mrs. Samuel Clark Red of Texas, the first president of the National Auxiliary, and others who could not be present, and then presented three past presidents, Mrs. Hunsberger and Mrs. McGlothlan, who made happy acknowledgments, and our own Mrs. Percy, who gave a brief address which was enthusiastically received. We should regard with pride the position California has attained, due in a large measure to the efforts of Mrs. Percy, who is held in affectionate esteem by everyone in the national organization.

On Tuesday an equally delightful innovation, in the form of a "Southern breakfast," was held. This affair honored Mrs. Southgate Leigh of Virginia, president of the Southern Medical Auxiliary, Mrs. Blake and Mrs. Tomlinson. An added feature was the presence at the breakfast of many prominent men of the American Medical Association, and the Southern Medical Association, many of whom spoke and paid tribute to the magnificent administration of Mrs. Blake, and attested their own interest in the work of the Auxiliary and its value to the Medical Association. Immediately after breakfast all adjourned to meet in the commodious assembly room assigned for our general session.

The opening business session of our annual convention was called to order by Mrs. Blake. Following the invocation, Mrs. Blake extended a welcome to the delegates, alternates and guests, and introduced Mrs. Cummer, the convention chairman, who outlined briefly the program that was in store for us, and who extended a very cordial invitation to everyone to participate in all entertainments. Mrs. Elmer Whitney of Detroit responded with a few well-chosen words. The "In Memoriam" service, to honor the memory of our departed members, was impressively beautiful and exquisitely carried out by Mrs. Frank Haggard of Texas, with appropriate vocal accompaniments by Mrs. Charles P. Corn of South Carolina.

Mrs. Blake gave a very comprehensive report of the activities and accomplishments of the Auxiliary for the past year, stressing our needs and stimulating a more complete understanding of our responsibilities and ideals. She also paid high tribute to the work of the chairmen of several committees and accorded praise to many States for work done in promoting health education, to a few states for definite legislative efforts which had been authorized by their respective advisory councils. After hearing Mrs. Blake, each one was fired with a determination to work more diligently for the organization that offers such great possibilities of service. It was gratifying to hear that our membership numbers about 15,000, with thirty-nine states represented at this time.

The national treasurer's report was received with enthusiasm. The budget had not been exceeded this year, and the balance on hand had increased to a marked degree. It was Mrs. Percy's wish that $500 be transferred from the general fund to the Corinne Keen Freeman Revolving Fund, which now amounts to over $800. This fund is used by the incoming president, if necessary, for current expenses of the Auxiliary, until such time as the dues are paid, and any and all amounts thus expended are returned to the Fund before the end of the year. The annual budget for 1934-1935 is $3,100. The financial status of the Auxiliary is excellent.

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. Elmer A. Belt, chairman of the Publicity and Publications Committee, 2200 Live Oak Drive, Los Angeles. Brief reports of county auxiliary meetings will be welcomed by Mrs. Belt and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxiliary notes.

† In order to present the full report of the national meeting, request was made to the Committee on Publications to print the same in one issue, with waiver of space in the October CALIFORNIA AND WESTERN MEDICINE.

The annual reports of the Program chairman and the chairman of Public Relations were particularly interesting. Mrs. McGlothlan, chairman of Program and Health Education, pointed out, among other items, the necessity to reprint certain study envelopes, and announced the issue of two new sets—one on milk, and the other on prevention of blindness. Mrs. David Long, chairman of Public Relations, said in part: "We cannot overemphasize the importance of training for our members. The self-education part of our program is increasingly important." Her recommendation "that county chairmen of Public Relations secure the use of Hygeia news sheets in local press" was adopted. She also urged the promotion of county health institutes, similar to those held in Philadelphia, the details of which will be outlined to you at an early date by our own state chairman of Program and Health Education, Mrs. Charles E. Howard.

Mrs. Rogers N. Herbert, chairman of Hygeia, showed clearly in her report the value and strength of this magazine, and the gain it has made this year; her own State, Tennessee, alone boasting of one thousand subscriptions. She complimented many States on the progress made, and was gracious to mention California in particular, and the placing of subscriptions in Alaska, Hawaii, and the Philippines.

The historian, Mrs. Willard Bartlett of Missouri, presented *The First Twelve Years,* a brief outline, chronologically set forth, of the Auxiliary since the beginning. This historical sketch was printed, and a limited number of copies were thus made available for members. It is my understanding that this booklet will ultimately be included in a new edition of the Handbook.

The recommendations of the Standing Committee chairmen, approved the previous day, were read and officially adopted.

The address of Dr. Junius B. Harris, scheduled for the first session, was postponed until Wednesday, due to a misunderstanding about the man who was to have operated the projector. Unless the operator were a union man, the hotel manager said all the employees would walk out. Quick to appreciate our dilemma, and wishing to avert a calamitous situation for everyone concerned, Doctor Harris went in search of a union operator. After the adjournment of our first session, all hastened to attend the entertainment provided by the committee Tuesday noon—an elaborate luncheon and fashion show, with music, at the Lake Shore Hotel on Lake Erie. The attendance at this luncheon far exceeded expectations, some four hundred persons enjoying a delightful interlude, and many remaining afterward for bridge.

In making up the social program for this convention, the committee did not lose sight of the fact that frequently at conventions our members have to forego the pleasure of attending any sessions of the Medical Association due to the fact that too full a program has already been arranged. The evening of Tuesday, June 12, was left open, and all Auxiliary members were asked and urged to attend the opening general session of the American Medical Association in the Cleveland Auditorium. Dr. Dean Lewis' address was followed by that of the newly installed American Medical Association president, Dr. Walter L. Bierring of Des Moines. Doctor Bierring is a man of great prominence in the scientific and medical world, and presents a forceful and altogether charming personality. It gives me pleasure to add that Doctor Bierring will attend the annual convention of the American Public Health Association in Pasadena on September 2, when an opportunity will be given all of us to meet and hear him. It may not be out of place here to refer to the compliment that was paid California in the recent election of the American Medical Association at Cleveland. Our own well-loved and recent president of the California Medical Association, Dr. George L. Reinle, was elected vice-president of the American Medical Association.

Wednesday morning the second session of our general meeting opened, Mrs. Blake presiding with her usual charm and dignity. Every one of our California delegates was present at this session: Mesdames James Percy, Junius Harris, Frederick Scatena, and J. Roy Jones of Sacramento; Charles H. Lewis of Santa Monica, and Philip S. Doane. After the reading of the minutes of the previous session, the report of the Committee on Credentials and Registration was read. Mrs. Eben Carey, who not only had charge of registration at the Carter Hotel but, also, managed a similar booth at the Auditorium, stated that eight hundred women members and guests had registered, and that thirty-nine states were represented.

Suitable resolutions were offered by Mrs. Lucius Cole of Chicago, in acknowledgment of courtesies extended. For lack of time, Mrs. Blake announced that the reading of the reports of state presidents would necessarily have to be postponed until the afternoon, when an opportunity would then be given all state presidents attending the convention to read their own reports.

The Nominating Committee's report was read by Mrs. Rock Sleyster of Wisconsin, chairman, and the ticket as presented by the committee was declared elected. Mrs. Rogers N. Herbert of Nashville, affectionately known to us through her wonderful work for Hygeia, was made president-elect. Our own Mrs. Frederick N. Scatena of Sacramento was elected a two-year director of the national board. We are grateful that California will be so ably represented on the national board.

After the introduction of the newly elected officers and members of the national board, Mrs. Blake announced the arrival of Dr. Junius Harris. Doctor Harris presented his subject, *Technique of Putting a Bill Through a State Legislature,* with clearness characteristic of only a man of his political and legislative acumen. His address was attentively listened to and enthusiastically greeted. Many questions were asked by the members, and intelligently answered. It was my pleasure to make a brief introduction of Doctor Harris, and the thought came to me at the time that no greater honor or courtesy could have been bestowed on me by the national president than the privilege of presenting our esteemed California physician.

Following Doctor Harris, the speaker was Dr. W. W. Bauer of Chicago, director of the Bureau of Health and Public Instruction of the American Medical Association. Doctor Bauer spoke frankly of the opportunities that the states and counties have in the promotion of health education within their own boundaries, and offered suggestions as to the literature that is available for our use, and material for radio dissemination. He dwelt at length on the coöperative relations that have been established by the American Medical Association and have existed over a period of years, with four great national organizations, namely, the General Federation of Women's Clubs, National Congress of Parents and Teachers, the National Committee for Boys and Girls' Club Work, and the National Education Committee. Doctor Bauer urged that we acquaint ourselves with the principles and policies of the American Medical Association, and at all times coöperate with them, emphasizing that this coöperation would always reflect to our mutual benefit. He recommended our using Hygeia material more effectively on our programs, and suggested the wisdom of counties setting aside money for the purchase of American Medical Association literature for distribution. An opportunity will be given us to hear Doctor Bauer at the American Public Health convention in Pasadena in September—an opportunity which we certainly should not fail to overlook. After Doctor Bauer's address, adjournment was taken for 1933-1934.

The National Auxiliary luncheon followed, honoring the new National officers, with Mrs. Blake presiding, who presented a most attractive young Southern woman of Fort Smith, Arkansas, as toastmistress—Mrs. William Brooksher, Jr. The occasion was perhaps the most brilliant of the entire convention, for it gave us an opportunity to see and hear a number of prominent American Medical Association men and

their wives, who were at the speakers' table. Dr. Rock Sleyster, trustee of the American Medical Association, spoke impromptu, and Dr. Southgate Leigh was high in his praise of the work done by the Auxiliary for *Hygeia*. He remarked that some years ago the American Medical Association gave *Hygeia* to the women, who "got it out of a $30,000 hole," and that now, with economic conditions as they are, and *Hygeia* "in the red" again, it is imperative that we get behind this magazine and push still harder. Dr. and Mrs. Bierring were present on this occasion, and some excellent words of wisdom were spoken by him, with tribute to the work of the Auxiliary. The guest speaker of the day was Dr. J. A. Meyer of the University of Minnesota.

In the afternoon Mrs. Percy and I were escorted by the convention chairman, Mrs. Cummer, to pay a visit to the Crile Clinic, which only a few years ago was visited by a great tragedy. The original building still stands in mute testimony to the sacrifice of thirty-nine doctors, whose lives were snuffed out in their prime. I could not but feel that there in Cleveland no more lasting memorial to the men of science could be erected than this cenotaph. The new Clinic building is modern in all its appointments, and a great tribute to Dr. George W. Crile and his associates.

The evening of the 13th was devoted to a most enjoyable musicale and reception given at the Allen Memorial Medical Library. This function was sponsored by the Ohio State Medical Association and the Academy of Medicine, and invitations were extended to all members of the Auxiliary and the American Medical Association. Mr. and Mrs. F. F. Prentiss received the guests, and extended their hospitality to some nine hundred persons.

At 9 a. m. on Thursday, Mrs. Herbert held a Hygeia Conference, and at the same time Mrs. David Long held a conference on Public Relations. I spent the first hour of the morning at the Hygeia Conference, and the second hour at Mrs. Long's. Both were immensely interesting and instructive. The opportunity was given for an informal discussion of problems in both conferences. It might be termed an "experience" meeting where, in the interchange of ideas and the injection of the personal equation, a most perfect perspective is gained and we take heart to carry on with greater confidence in ourselves.

At eleven o'clock a general meeting was held and largely attended, presided over by our new national president, Mrs. Robert W. Tomlinson of Delaware. Mrs. Tomlinson read her plans and policies for the year, asking for the full coöperation of all States in the program of organization, health education and membership, and added that she predicts the organization of Maryland and New York State (Queens County alone being now organized in New York) in the near future. Informal discussions followed on matters of finance and membership. The new national treasurer, Mrs. Eben Carey, presented to the members a copy of the voucher and treasurer's remittance slips that are being used by California, and urged more States to adopt the same method, stating that this uniform system would make for convenience and accuracy. It is interesting to note the diversity in State constitutions regarding the qualifications for membership—some States providing for wives and mothers only, and others for wives, mothers and daughters, while sisters claim eligibility in a few States. Apparently California is the only State that boasts of having adult granddaughters included; and when asked to explain, I could not resist the reply simply, "The inclusion of this classification in our membership is based upon our necessity for it, as we live longer in California!"

This "post-convention" general meeting, as I would choose to call it, is of great value, in my opinion, giving an opportunity to each member to ask questions about her own particular problems; to ascertain what change, if any, is likely to be made in any national policies and, lastly, a happy occasion at which to meet personally the members of the incoming national board. I would like to see a "post-convention" general meeting added to our State convention program.

Immediately after the adjournment of this meeting, members were taken to the Country Club for luncheon and a Style Show, after which they were invited to visit the gardens of Mr. and Mrs. F. F. Prentiss at Glenallen, the beauty and dignity of which beggar description.

The "bring-your-husband" dinner of Thursday evening brought out an exceptionally large attendance. All women guests of the American Medical Association were asked to participate in this affair. For the most part, everyone left afterward to attend the reception and ball given by the American Medical Association to honor the newly installed president of the American Medical Association at the Cleveland Hotel. The reception, beautiful in every appointment, gave all an opportunity to pay his respects to Doctor Bierring and to Doctor McLester, the president-elect of the American Medical Association and to greet the trustees. Most of the members of our own national advisory board were present, and it was a pleasure to meet them in person. It seemed only fitting that the last evening of the Cleveland convention should bring together both the members of the American Medical Association and members of the Woman's Auxiliary in a social function where medical politics and materia medica were for the moment forgotten.

I have endeavored to give you a picture of a small part of the happenings of the Cleveland convention. But, besides, I do feel that I may be forgiven a few personal observations and comments. At the outset, I should like to pay particular tribute to Mrs. Blake and to Mrs. Tomlinson. Both women are leaders, both women have great charm and ability. We may look for a fruitful year under Mrs. Tomlinson, who has chosen, for the most part, for her standing committee chairmen, the same women who served last year under Mrs. Blake, who continues another year as a director on the national board. I beg to refer especially to Mrs. A. B. McGlothlan, past president, who has served as Chairman of Program so efficiently and assisted in the compiling of the Handbook, and whose duties involve rare and expert judgment at all times. To Mrs. David Long of Missouri, who continues in her post as chairman of Public Relations, I would pay particular compliment. Everyone is familiar with work done by Mrs. Robert Fitzgerald as Chairman of Press and Publicity, and it is gratifying to know that she will "carry on" another year, and give us the News Letter. She is a gifted writer, wields a facile pen, and will bring many interesting items to our attention in her forthcoming contributions to the Woman's Auxiliary department of the *Journal of the American Medical Association* and as editor of the "Quarterly News Letter." Wisconsin contributes the national treasurer this year, Mrs. Eben Carey, who so ably conducted the registration at Milwaukee last year and again this year, and who has earned for herself the confidence and affection of a host of members. Mrs. Henry Miner will continue as chairman of Exhibits. Her absence at Cleveland was deeply regretted; but the exhibits were well placed, and much interest was manifested in them. Mrs. Nordurfth, president of the Kansas State Auxiliary, assumed Mrs. Miner's responsibility, and had charge of the exhibits at the convention. Mrs. Frank Haggard of Texas assumes the position of historian, while Mrs. William J. Burnes of Minnesota continues as national parliamentarian; Mrs. William Burrill Odenatt of Pennsylvania, as chairman of Archives, and Mrs. John McCaw as chairman of Revisions, have both been reappointed by Mrs. Tomlinson. Mrs. William O. LaMotte of Delaware will assume responsibility of Finance chairman, and Mrs. Walter Jackson Freeman, Jr., daughter of the late beloved Mrs. Freeman, will be Legislative chairman; Mrs. H. H. Hunsberger of Pennsylvania, who has endeared herself to everyone, will have charge of supplies; and the selection of Mrs. Laurence Jones

of Delaware for corresponding secretary was made by Mrs. Tomlinson. Mrs. Rollo K. Packard of Chicago, who has served as national fourth and second vice-presidents, was elected first vice-president. Her official experience, both in National and State work, well qualifies her for this position, which brings with it the chairmanship of Organization and Membership. The new recording secretary is Mrs. Elmer Whitney of Detroit, state president of Michigan, whose contributions to the Michigan Auxiliary are well known. To Mrs. Rock Sleyster of Wisconsin, who continues as director for another year, I desire to make particular tribute. Mrs. Sylvester is known and loved by many of us in California, and will be remembered as the very able convention chairman of Milwaukee in 1933. The national board is made up entirely of women who are experienced and alive to our needs, and who will serve our organization well.

The "Hygeia" chairmanship, held for the past four years by Mrs. Rogers N. Herbert of Tennessee, must necessarily be announced later by Mrs. Tomlinson. Mrs. Herbert, our president-elect, was loathe to give up Hygeia, but assured us all that she would continue on in an advisory capacity this year. The work done for Hygeia by Mrs. Herbert bears testimony to the character of the administration we may look forward to in 1935-1936, when Mrs. Herbert takes over the reins of national president.

I would respectfully call attention to the "Memorial Book," which contains the names of the deceased members of every State. This book was placed on a table near the president, and each state president was asked to enter the names of departed members. It is the wish of the administration that this book be kept up to date as far as possible. I noticed that the page for California was blank, and regret the apparent omission. This would lead me to believe that some method should be adopted this year whereby each of our organized counties would feel it a definite obligation to forward to the state president, before the new state convention, the names of all members who have passed on. In this way, the complete list may be entered in the national Memorial Book before the next national convention at Atlantic City.

I cannot bring this chronicle to a close without a word of sincere praise for the efforts of Mrs. Cummer, the convention chairman, and Mrs. Karsner, vice-chairman, and their committees. The program was beautifully planned and meticulously carried out. There was not a moment when some member of the committee was not at hand to offer suggestions, or to give reliable information to our members. The entertainment was varied and presented interesting diversions and enjoyment to everyone. I would like to add that, before leaving Cleveland, Mrs. Percy received a check from Mrs. Lenhart, treasurer of the Convention Committee, for a refund of the full amount appropriated to the committee by national.

The session of 1934 has come to a close, and will pass into history as one of our most brilliant and outstanding annual gatherings. It was a privilege to have attended the convention; the value of personal contact with the members of the national organization cannot be overestimated. To be able to confer in person with committee chairmen, to talk over problems of public relations, legislation and similar questions in their relationship to medical affairs, is of infinite value. The encouragement received offers an added stimulus to the work which we, as states and counties, are endeavoring to do to render aid to organized medicine in an effort to promote and develop medical consciousness in our members.

I wish to express the sincere hope that at our annual meeting in Yosemite next spring, Mrs. Thomas Clark may be given the same privilege that was so graciously accorded me at Riverside, of being asked to attend in her official capacity as state president at the national convention in Atlantic City.

For the consideration and courtesy shown me by you; for the hospitality and welcome received in Cleveland; for the opportunity to meet the members of the national board and presidents and members from other states; for the inspiration that these contacts have brought me; and for all of these stimulating and outstanding experiences, and much more, I beg to make acknowledgment with deep gratitude and affectionate appreciation.

HELEN STEWART DOANE.

July 28, 1934.

Fruit and Vegetable Feeding.—Schultz and his associates state that a study of the iron metabolism of three normal infants, ranging in age from five weeks to seven months, has shown that vegetable (spinach) or fruit (apricots) feeding in addition to the milk formula exerts no significant effect on the amount of iron retained by the infant. Such feeding increased the iron intake from 60 to 171 per cent. The hemoglobin concentration and the number of erythrocytes in the blood were within or above the normal range for infants of this age and were not raised by the vegetable or fruit feeding. A study of the effect of such feeding on an anemic infant, twenty-three months old, who had been living on an almost exclusive milk diet, has shown a lack of effect in the case of dried spinach but a marked increase in retention of iron when apricots were added to the diet, an effect that disappeared again after wheat germ extract was included. The effect in each case is related to the amount of fecal matter eliminated in the period of metabolism. The hemoglobin concentration and erythrocyte count of the blood were not improved during the course of such feeding. A large increase in the concentration of soluble iron in the diet of the anemic infant, brought about by adding ferric ammonium citrate, resulted in a large increased retention of iron but, up to the end of three weeks on the diet, only a slight increase in the number of erythrocytes had occurred, and practically no change in hemoglobin concentration. When the diet of the anemic infant was further supplemented by liver, the retention of iron was increased still more. The retention in this instance was accompanied by a rise in hemoglobin from 6 to 9.1.—*Journal of Pediatrics.*

Sign of Lumbago.—Demianoff describes a sign that permits the differentiation of pain originating in the sacrolumbalis muscles from lumbar pain of any other origin. The sign is obtained by placing the patient in dorsal decubitus and lifting his extended leg. In the presence of lumbago this produces a pain in the lumbar region which prevents raising the leg high enough to form an angle of 10 degrees, or even less, with the table or bed on which the patient reposes. The pain is due to the stretching of the sacrolumbalis. To make certain that the pain is not due to sciatica (Lasègue's sign), the patient's leg is lifted a second time. This time the physician fixes the pelvis on the same side by pressing heavily with his hand on the region of the homolateral anterosuperior iliac crest. The fixation of the pelvis prevents the stretching of the sacrolumbalis and permits raising the leg to an angle of 90 degrees without, or practically without, the production of lumbar pain. If the pain produced by raising the leg is due to sciatica, it is not suppressed by fixing the pelvis, as this does not prevent the sciatic nerve from being stretched. The more acute the angle (between the leg and the table) at which lumbar pain is first experienced, the more severe is the involvement of the sacrolumbar muscle. The test should be performed on both legs. This sign of lumbago is usually manifest on both sides, but the angle to which the legs can be raised may vary, as the muscle pain may be more intense on one side. If lumbago and sciatica coexist on the same side, the author's sign is negative on that side but it will be positive on the other side. In the rare case of simultaneous lumbago and sciatica on both sides, the author's sign will be excluded by Lasègue's sign.—*Presse Médicale.*

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Correction of Editorial Statement Regarding Chiropractic Initiative

California Supreme Court Rules That the Chiropractic Initiative Shall Go On November 6 Ballot

As the last form of September "California and Western Medicine" is being put on the press, word comes through the Associated Press, under date of September 5, that the Chiropractic Initiative, which Secretary of State Jordan ruled was not eligible for a place on the November ballot, would, after all, be one of the initiatives to be voted on at the November state election.

In our editorial on page 194 it was stated that the Chiropractic Initiative Petition had failed to secure a place on the November ballot. This further complicates the legislative problems which confront the California medical profession.

This notation is being made in black-face type in order to acquaint the members of the component county societies with the seriousness of the situation which now exists. Every member is urged to read the editorial comment on page 194 concerning the Naturopathic Initiative because statements contained therein apply also to the Chiropractic Initiative.

It is also hoped that members of California Medical Association will recognize the importance of taking action along the lines outlined in the editorial comments on page 195 in which methods of proper and efficient organization are indicated.

Officers of county societies are invited to write to the central office of the California Medical Association, room 2004, 450 Sutter Street, San Francisco, on any matters which they desire information.

Coming Meetings

American Hospital Association, Philadelphia, September 24-28. Bert W. Caldwell, M. D., 18 East Division Street, Chicago, Executive Secretary.

American Medical Association, Atlantic City, New Jersey, June 10-14, 1935. Olin West, M. D., 535 North Dearborn Street, Chicago, Secretary.

California Medical Association, Yosemite National Park, May 13-16, 1935. Emma W. Pope, M. D., 450 Sutter Street, San Francisco, Secretary.

Nevada State Medical Association, Reno, September 21-22. Horace J. Brown, M. D., 120 North Virginia Street, Reno, Secretary.

Oregon State Medical Society, Corvallis, September 27-29. Howard Smith, M. D., Medical Arts Building, Portland, Secretary.

Pacific Coast Society of Obstetrics and Gynecology, Oakland and Del Monte, November 21-24. Clarence A. Depuy, M. D., 230 Grand Avenue, Oakland, Secretary.

Washington State Medical Association, Spokane, September 10-13. Curtis H. Thomson, M. D., 1305 Fourth Avenue, Seattle, Secretary.

Medical Broadcasts*

American Medical Association Health Talks. — The American Medical Association broadcasts on a western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, central daylight saving time.

* * *

San Francisco County Medical Society. — The radio broadcast program for the San Francisco County Medical Society for the month of September is as follows:

Tuesday, September 4—KJBS, 11:15 a.m., and KFRC, 1:15 p.m. Subject: Medicine Marches Forward.
Tuesday, September 11—KJBS, 11:15 a.m., and KFRC, 1:15 p.m. Subject: Man Versus the Mosquito.
Tuesday, September 18—KJBS, 11:15 a.m., and KFRC, 1:15 p.m. Subject: Diabetes.
Tuesday, September 25—KJBS, 11:15 a.m., and KFRC, 1:15 p.m. Subject: Laennec, Inventor of the Stethoscope.

* * *

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of September is as follows:

Saturday, September 1—KFI, 9 a.m. Subject: Health Talk.
Saturday, September 1 — KFAC, 10 a.m. Subject: Your Doctor and You.
Tuesday, September 4—KECA, 11:15 a.m. Subject: Health Talk.
Saturday, September 8—KFI, 9 a. m. Subject: Health Talk.
Saturday, September 8—KFAC, 10 a.m. Subject: Your Doctor and You.
Tuesday, September 11—KECA, 11:15 a. m. Subject: Health Talk.
Saturday, September 15—KFI, 9 a.m. Subject: Health Talk.
Saturday, September 15—KFAC, 10 a. m. Subject: Your Doctor and You.
Tuesday, September 18—KECA, 11:15 a.m. Subject: Health Talk.
Saturday, September 22—KFI, 9 a.m. Subject: Health Talk.
Saturday, September 22—KFAC, 10 a.m. Subject: Your Doctor and You.
Tuesday, September 25—KECA, 11:15 a.m. Subject: Health Talk.
Saturday, September 29—KFI, 9:00 a.m. Subject: Health Talk.
Saturday, September 29—KFAC, 10 a.m. Subject: Your Doctor and You.

Some Important State Election Dates

September 27—Last day of registration for the general election.

November 6—General election.

Query—Are you registered?

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to CALIFORNIA AND WESTERN MEDICINE, 450 Sutter Street, San Francisco, for inclusion in this column.

Occupation and Length of Life.—What effect has a man's job on the length of his life? An answer to this question is offered by Miss Jessamine S. Whitney, statistician of the National Tuberculosis Association, in a report of a five-year study conducted under her supervision, and recently made public by the Association.

The highest death rate from all causes, for working men, 15 to 64 years of age, was found among hostlers and stable hands, 36.22 deaths per thousand employed. The rate for garage laborers of the same ages was only 6.65. The rate for operatives in harness and saddle factories was 30.55; for aviators, 28.73; for operatives in cigar and tobacco factories, 19.32, which was also the rate found for boatmen, canal men, and lockkeepers. Sailors and deck hands had a rate of 17.28. These may be compared with school teachers, with a rate of 4.42, and social and welfare workers, with a rate of 2.75, or with the rate for all "gainfully employed males," age 15 to 64, of 8.70 per thousand. In the public service, guards, watchmen, and doorkeepers died at the rate of 20.25 per 1,000. Firemen showed a rate of only 6.71. General laborers in the public service had a rate of 7.15, but garbagemen were found to have an index of 11.39. The rate for postmasters was higher than that for mail carriers, the figures being, respectively, 11.00 and 6.10.

Other comparisons taken from the report are: lawyers, judges, and justices, 7.89; physicians and surgeons, 10.69; clergymen, 10.33; cemetery keepers, 6.50; college presidents and professors, 2.69. Rates for laborers in the chemical and allied industries were low at 5.13, and laborers in soap factories, 3.29, while for inventors the rate is 17.65 and for draftsmen, 3.21. Managers and officials of real estate companies have a rate of 5.64, but for real estate agents it is 10.09. Chauffeurs and truck and tractor drivers, 6.19; draymen, teamsters, and carriage drivers, 17.59; telegraph operators, 10.09, and telephone operators, 4.59. . . .

Fifth Annual Medico-Military Symposium at the Mayo Clinic, October 7 to 20.—The 1934 Medico-Military Symposium for Medical Department Reserve Officers of the Army and Navy will be held at the Mayo Clinic from October 7 to 20, both dates inclusive.

This is the fifth annual Inactive Duty Training Course to be held at the Mayo Clinic, and will follow the plan which has proved so satisfactory in past years; that is to say, the morning hours will be devoted to attending clinics on subjects selected by the student officers, and the afternoon and evening hours given over to work in Medico-Military subjects. . . . The general motif of the Medico-Military part of the symposium will be "Public Health and Its Relation to National Defense." The problems of administration in military service present features not dealt with in private practice. In the great field of sanitation as applied to military service, the medical officer has a distinct specialty. This course offers valuable and interesting training for the medical officer in all the components of our national defense. . . . Application for this course of Inactive Duty Training should be made either to the Corps Area Surgeon, Seventh Corps Area, Omaha, Nebraska, or to the District Medical Officer, Ninth Naval District, Great Lakes, Illinois. Applications should state the character of the work the candidate desires to follow in the morning hours. All student officers are expected to attend and participate in the afternoon and evening sessions. Each applicant should fully understand that the invitation to accept this course of study without charge is extended by the Mayo Clinic; that the project is without expense to the Government; and that one hundred hours' credit will be given those who take and complete the course. While it is desirable to attend the entire course, those whose time will not permit this may join or leave at any time and will receive credit for the hours spent in training. Uniforms are optional.

The Pacific Coast Society of Obstetrics and Gynecology.—The annual meeting of the Pacific Coast Society of Obstetrics and Gynecology will be held at Oakland and Del Monte on November 21-24, 1934. Dr. Lyle G. McNeile of Los Angeles is president; Dr. J. Morris Slemons of Los Angeles, the president-elect; and Dr. Clarence A. DePuy of Oakland, the secretary-treasurer, of this organization.

Venereal Disease Information.—For a number of years the United States Public Health Service has been publishing, for the information of physicians, health officers, and others, a monthly abstract journal known as *Venereal Disease Information.* This publication contains usually one original article on a subject of general interest in connection with the venereal diseases, and numerous abstracts from the current literature pertaining to these diseases. In the preparation of this abstract journal more than 350 of the leading medical journals of the world are reviewed and abstracts made of the articles on this subject.

The cost of *Venereal Disease Information* is only fifty cents per annum, payable in advance to the Superintendent of Documents, Government Printing Office, Washington, D. C. It is desired to remind the reader that this nominal charge represents only a very small portion of the total expense of preparation, the journal being a contribution of the Public Health Service in its program with state and local health departments directed against the venereal diseases.

Sickness, Unemployment, and Fertility.—The birth rate among wage-earning families who suffered serious loss of income on account of the depression was 39 per cent higher in the period 1929-1932 than among their neighbors whose incomes were not reduced following 1929. Furthermore, there was 50 per cent more illness in families whose incomes dropped most sharply than in those who were not seriously affected by the depression.

These findings are reported in a recent issue of the *Milbank Memorial Fund Quarterly* by Edgar Sydenstricker, in charge of the foundation's division of public health activities, and G. St. J. Perrott, consultant to the United States Public Health Service, following a house-to-house investigation of occupation, employment, income, births, and ill health in eight thousand families in eight typical cities. The authors believe this study to be the first of its kind ever undertaken.

The birth rate for families with incomes averaging below $1,200 was one and one-half times that of those averaging above $2,500 but still in the wage-earning class. The highest birth rate, 178 per thousand, was in families classed as poor in 1929 as well as in 1932. It is considered significant, however, that families forced to shift from a higher to a lower income level were found to have a higher birth rate during the depression years than those families who were able to remain in the class from which the downward shift was made. Where the drop was from $2,000 or more to less than $1,200 the differential rates were 107 for those who kept their income and 133 for those who suffered a loss; for the drop from those averaging between $1,200 and $2,000 to a level below $1,200 the differential rates were similarly 113 and 157.

The illness rate was relatively great in families without employed workers, less in families with part-time workers only, and still less in families with full-time workers. These figures do not mean, however, that illness was a cause of unemployment. "In fact, ill health as a cause of unemployment was relatively unimportant in comparison with lack of work." The authors conclude that "insofar as illness is an indication, the health of persons comprising families seriously affected by the depression is being impaired."

University of California Report at American Medical Association Meeting.—Because of recent contributions made by the department of pharmacology at the University of California Medical School to the methods of treating amebic infections of the intestinal tract, the American Medical Association was asked to present a special exhibit on that subject at its summer meeting in Cleveland, Ohio, June 11-15.

Under the title of "A Summary of Studies on the Chemotherapy of Amebiasis," the University of California will outline the work which its staff members have carried on since 1929, under the direction of Professor Chauncey D. Leake, department of pharmacology, and Professor E. L. Walker, and Professor A. C. Reed of Hooper Foundation.

The most outstanding result of this research was the development of two drugs which have proved more effective and less dangerous in the treatment of amebic infections, one of which is commonly known as dysentery, than any previous agents.

These drugs are known as "Carbarsone," an arsenical derivative, and "Vioform," a quinin derivative. The former, especially, has been used in all the major areas of the world where amebiasis occurs. Reports of its successful application in the alleviation of the disease have just been received from India. It was also used with success in the recent outbreak of amebiasis centering in Chicago during the Exposition.

Convalescents' Serum in Acute Anterior Poliomyelitis.—In an article in the *Klinische Wochenschrift*, Schlossberger and Krumeich of the Federal Bureau of Health state that it was eminently desirable that observations on the effects of administering convalescents' serum in poliomyelitis be collected. The outbreak of 1932 offered such an opportunity, particularly as special arrangements were perfected for the preparation of convalescents' serum. To secure a survey of the results, a special session of the Federal Health Council, to which numerous experts were summoned, was called. In addition, the Federal Bureau of Health sent questionnaires to all physicians and hospitals that had ordered convalescents' serum. Exact clinical reports on 227 cases were received. Patients with uncertain diagnosis were excluded. Of these 227 patients, twenty-six were given the serum in the preparalytic stage and 201 after the appearance of paralysis. In the twenty-six patients, a complete cure of the disease without paralysis was effected. There were no deaths, although in two patients of this group paralysis developed later. In contrast with the results just mentioned, the disease proved fatal in twenty-five of the 201 patients of the second group. According to the observations of the attending physicians, in 148 of these 201 patients the administration of serum had no influence on the paralysis, while in the remaining twenty-eight cases there was a pronounced retrogression of the paralysis. But since such improvement was observable with about the same frequency also in untreated patients, no special importance can be attached to these observations. The view expressed by many other physicians must be endorsed, namely, that convalescents' serum will not bring about a retrogression of paralysis once it has developed. Since the number of patients who died, although treated in the paralytic stage with convalescents' serum, corresponded closely with the mortality that prevailed in 1932, it does not seem likely that the administration of the serum after the onset of paralysis exerted any harmful effect. The conclusion is, therefore, that convalescents' serum may be injected after the onset of the paralytic stage with a view to checking, if possible, the progress of paralysis.

Although the number of patients in Germany treated with convalescents' serum in the preparalytic stage is too small to justify a final opinion, the observations made thus far seem to show that this therapeutic measure has proved its high value. Great care must be taken, therefore, by the creation of a suitable organization, that cases of poliomyelitis are recognized promptly and that serum treatment is instituted in season.—News Letter, *J. A. M. A.*, August 25, 1934.

Interstate Postgraduate Medical Association.—The international assembly of the Interstate Postgraduate Medical Association of North America will be held in the Public Auditorium, Philadelphia, Pennsylvania, November 5-9, 1934. Many distinguished teachers and clinicians will appear on the program. All members of the California and Nevada State Medical Societies are cordially invited to attend. Registration fee of $5 admits all members of the profession in good standing.

Dinitrophenol Dangerous in "Reducing" Nostrums. The Press Service of the United States Department of Agriculture has sent out the following bulletin: The "reducing racket" has a group of new and dangerous drugs, dinitrophenol and related compounds. Racketeers are selling these drugs in fat reducers in spite of reports of deaths caused by their compounds, says W. G. Campbell, chief of the Food and Drug Administration. "Reducing agents containing these drugs," says Mr. Campbell, "have sprung up like mushrooms all over the country, and are endangering the lives of patrons. The Federal Food and Drugs Act has no jurisdiction over products of this type, dangerous though they may be. All that the Food and Drug Administration can do is to warn the public that these compounds are dangerous."

Clinical evidence shows, Mr. Campbell said, that these drugs act by increasing the metabolic rate. This amounts to a speeding up of the body processes, resulting in a destruction of the tissues, including fat, to provide fuel for the accelerated metabolism. Common symptoms are increased temperature, pulse or respiration, or copious sweating. In particular, Mr. Campbell warned, these drugs should not be used by individuals suffering from chronic rheumatism, alcoholism, tuberculosis or diseases of the heart, liver or kidneys, as poisonous and otherwise harmful effects are even more likely to manifest themselves. There is also some evidence that they may cause profound disturbance of the blood-forming organs.

These drugs, in common with many others, may serve a useful purpose when the dosage is properly adapted to the needs of the individual patient, provided there are no contra-indications to its use, he says. Proper dosage and indications for use, however, as well as prompt discovery of toxic effects, can be determined only by a skilled physician. Furthermore, there may be unexpected harmful effects that are not disclosed by the first tests. Such effects can be determined conclusively only after extensive trial and use, in addition to the tests which should in all cases be made before the preparation is offered to the public.

The Cancer Record of 1933.—Frederick L. Hoffman, LL.D., the consulting statistician who has been contributing a series of articles on health insurance to California and Western Medicine, recently called attention to the increased cancer mortality in 1933, which has had a steady advance record annually since 1906. From an article in *The Spectator* some paragraphs are quoted:

Cancer in 1933 exacted a heavier toll of lives in American cities than ever before. Compared with 1932 there was an increase in the rate for fifty American cities with uniform records dating back to 1906 from 122.7 per 100,000 to 124.7. During the first fourteen years of the period under review the rate increased 36.2 per cent against 24.4 per cent for the second fourteen years. The slight decrease in the proportionate increase is to be expected in view of the much higher rate prevailing at the present time than during former years.

Cancer is now the second leading cause of death, following diseases of the heart considered as a group. It is by far, however, the most important of our chronic diseases demanding more than ever the services of the physician, the surgeon, the radiologist, and the research worker, for, regardless of an immense

amount of qualified attention the world over, the disease continues to baffle the imagination as to diagnosis, treatment, and control. However disagreeable the conclusion, we apparently have not made the progress anticipated, for the disease continues to increase regardless of strenuous efforts to stem its ravages in the American population. The colossal magnitude of the problem is better illustrated by the statement that in the fifty cities under review, with an aggregate population of about 32,000,000 in 1933, there have been 722,274 deaths from cancer since 1906, or during a period of twenty-eight years. . . . Three statistical tables of interest follow:

TABLE 1.—*Cancer Death Rate in Some California Cities, 1932-1933*

	1932			1933		
	Population	Deaths	Death Rate per 100,000	Population	Deaths	Death Rate per 100,000
Fresno	54,133	45	83.1	54,853	43	78.4 —
Long Beach	160,851	176	109.4	169,215	136	80.4 —
Los Angeles	1,382,066	1,737	125.7	1,446,074	1,784	123.4 —
Oakland	298,832	346	115.8	305,396	368	127.0 +
Pasadena	82,782	132	159.5	85,758	178	207.6 +
Sacramento	99,825	148	148.3	102,525	160	156.1 +
San Diego	164,033	258	157.3	171,161	240	140.2 —
San Francisco	662,204	1,097	165.7	674,564	1,175	174.2 +
San Jose	61,566	59	95.8	63,306	44	69.5 —

TABLE 2.—*Curability of Cancer—Five-Year Cures*

	Average Per Cent
Stomach	1
Liver and Gall-Bladder	1
Prostate	1
Pharynx	1
Ovary	1
Kidney Adrenal	1
Thyroid	1
Lymphosarcoma	1
Intestine	2
Rectum	2
Bone Sarcoma	2
Brain	2
Larynx	5
Testis	5
Breast	9
Uterus	10
Tongue	10
Bladder	15
Intraoral	15
Lip	50
Skin	60
Pancreas	?
Lung	?
Esophagus	?

TABLE 3.—*Cancer Death Rates, United States and England and Wales, 1927 and 1931*

	Rates for 100,000			
	United States		England and Wales	
	1927	1931	1927	1931
Lip	0.4	0.5+	0.79	0.76
Tongue	0.8	0.8	3.32	2.96
Mouth	0.3	0.4+	2.11	1.57
Jaw	1.0	0.9	1.77	1.50
Pharynx	1.0	0.8	1.05	1.14+
Esophagus	1.6	1.7+	5.28	5.91+
Stomach	22.2	21.3	26.57	28.68+
Liver and gall-bladder	9.2	8.6	9.46	8.89
Intestines (excluding rectum)	9.0	9.6+	18.46	17.94
Rectum and anus	4.1	4.6+	11.25	12.26+
Ovary and fallopian tube	1.3	1.7+	2.78	3.26+
Uterus	12.1	12.1	11.27	10.86
Vulva and vagina	0.4	0.4	0.88	0.96+
Breast	8.8	9.6+	14.55	16.11+
Skin	2.5	2.5	2.71	2.91
Larynx	0.7	0.8+	2.58	2.80+
Lungs and pleura	1.9	2.4+	2.43	4.70+
Pancreas	2.2	2.6+	3.49	3.77+
Kidneys and supparenals	1.2	1.4+	1.36	1.54+
Prostate	3.5	4.1+	2.98	3.83+
Bladder	3.0	3.2+	2.82	3.31+
Brain	0.5	0.7+	0.39	0.54+
Bone (jaw excepted)	1.3	1.4+	1.79	1.79
Testes	0.2	0.3+	0.37	0.33

CORRESPONDENCE

Subject of following letter: Another instance of misappropriation of taxpayers' funds to undeserving "needy blind" applicants.

Los Angeles, August 16, 1934.

To the Editor: I was much interested and very much in sympathy with your editorial on "The Needy Blind" in the August issue of the State Journal (page 128).

During the past four years I have examined, both at social welfare clinics and at my office, about forty or fifty applicants for the blind aid pension. Most of those individuals have been definitely blind and apparently deserving of help. There have been a few who were endeavoring to make capital of their visual defect in order to receive the pension.

In a number of instances, however, the inadequacy of the form-blank for the "Report of Physician" has come to my attention. Again, it has sometimes been necessary to make a careful and thorough examination before the "cause of blindness' could be accurately determined. This at times is a problem, for, as might be expected, many of these patients are indigents, and the physician receives only thanks for his services.

The unfairness of the law was definitely illustrated last December, when a mother, aged 62, came with her unmarried daughter, aged 38, to have papers filled out. Each had completely matured cataracts in both eyes with perception of hand movements and perfect light projection. Tension and external condition of the eyes were normal. In other words, they were excellent candidates for cataract extraction.

When the subject of operative removal was mentioned, however, it brought forth a vigorous refusal, both stating that they were praying for healing and that the Lord in his own good time would restore their vision. Argument and even a prolonged interview with a clergyman failed to make any impression on them.

I talked with the local representative at the Blind Aid Bureau and was instructed to sign their papers if they were "blind."

In my report I urged that the patient could and should be rehabilitated. They both have received aid for several years, and I presume that they are still being supported by State funds.

It is easy to calculate that at the rate of monthly support given the blind, it would take less than a year's allowance to provide all costs of operation and hospitalization.

One is appalled at the thought that with the average expectancy of life before the daughter, she will have received approximately $15,000 of tax funds, before the Lord, instead of healing her blindness, finally gives her a crown in heaven.

This is a "free country," but it does not seem just that you and I should have our tax burden increased because of the whim of a misguided individual.

Let operation be offered and if refused, then let the support be withdrawn. She might then consent to operation.

If successful, a blessing has been conferred upon the patient, and the community aided. Should it not be successful, then she certainly would be entitled to blind aid.

I hope something constructive can be done to remedy this situation at least.

Sincerely yours,

DENNIS V. SMITH, M. D.

NATUROPATHIC ACT—INITIATIVE

Some Excerpts Therefrom

Attorney-General Webb of California has prepared a title and summary of the chief purposes and points of a proposed measure known as the "Naturopathic Act—Initiative," as follows:

Creates Naturopathic Association of California, a public corporation; provides for its organization, government, membership and powers; . . . provides licensees shall have in practice of their profession all rights and privileges of practicing physicians of any school or class in treatment of disease, injuries and other mental or physical conditions; gives licensees equal rights with physicians in institutions supported by public funds; provides penalties for violations. . . .

The proposed law and Act is as follows:

Section 1. This Act shall be known and may be cited as the "State Naturopathic Act." . . .

(4) For the purpose of this Act, naturopathy is hereby declared to include physiotherapy, physical therapy, phytotherapy, biochemistry, the use of antiseptics, anesthetics, applied therapeutics and prophylactic hygiene and sanitation; and the science and art of diagnosis, which enables the naturopathic physician to direct, advise, prescribe, dispense or apply food, water, roots, herbs, plants, oils, lights, heat, color, exercises (active and passive), manipulations correcting vital tissue, organs or anatomical structures by manual, mechanical or electrical treatment, instruments and appliances, x-ray, or any and all other natural agencies that have been used in the past, that are now in use, or that may be used in the future, to assist nature in restoring a physiological and psychological interfunction for the purpose of restoring and maintaining a normal state of health mentally and physically. . . .

Sec. 3. There is hereby created a public corporation to be known as the "Naturopathic Association of California," which shall have perpetual succession, a seal, may sue and be sued, and which may enter into contracts and acquire, encumber, dispose of and deal in and with real and personal property, establish and maintain colleges and institutions, establish scholarships, establish and maintain hospitals, clinics and professional libraries and do all things for the advancement of naturopathy.

No law now or hereafter enacted shall in any way qualify, regulate, restrict or prohibit the State Association from fully carrying out and effectuating all of the purposes and provisions herein contained.

All jurisdiction and authority over the practice of naturopathy shall be vested in the Naturopathic Association of California.

Sec. 4. All persons who, sixty days prior to the effective date of this Act, are members of good standing in the Naturopathic Association of California, a voluntary association of persons, and who can comply with the minimum standards as set forth in Sections 39, 40, and 41 hereof, shall constitute the first members of the Association. Thereafter, all applicants for membership in the Association shall conform to the requirements of this Act.

Sec. 5. There is hereby constituted a governing body of the Association to be known as the board of governors. The board shall consist of one member of the Association elected from each congressional district by the members of the Association resident in the particular congressional district. The members of the board of governors shall be elected annually. The board shall, by a majority vote of all members elected thereto, fill any vacancy occurring on the board until the next annual election. . . .

Sec. 12. The officers of the Naturopathic Association of California, a voluntary association of persons engaged in the practice of naturopathy and drugless healing, shall constitute a commission to place this Act into operation and to organize the Association.

This commission shall call the organization meeting of the State Association, to be held in the city of Sacramento not less than seventy nor more than one hundred days after the effective date of this act. . . .

Sec. 23. Approved naturopathic colleges shall admit as students only the following persons:

(1) Those who hold a diploma or other evidence showing graduation from a high school or a certificate issued hereunder showing such person to possess an education equivalent in training power to the requirements necessary for graduation from high school; and . . .

Sec. 28. Approved naturopathic colleges shall have the right to receive the bodies of unclaimed dead for the purpose of instruction and study in like manner and under the same provisions of law as such dead bodies are received and obtained by other institutions for scientific purposes. The State Board of Health shall allot unclaimed dead bodies to approved naturopathic colleges in the order of requests received for the same. No college shall receive more than one dead body until other colleges which have requested the same have likewise received a dead body. . . .

Sec. 35. In addition to the above requirements, all applicants must pass an examination given by the board in the following subjects: anatomy, including histology; physiology; pathology, bacteriology, and immunology; toxicology, hygiene and preventive medicine; biochemistry and phytotherapy; minor surgery and anesthesiology; diagnosis; naturopathic pathology, theory and practice; obstetrics and gynecology; and electrotherapy. . . .

Sec. 39. Except as hereinafter provided, subject to the provisions of Section 40 hereof, any person who is a member in good standing in the Naturopathic Association of California, a voluntary association of persons engaged in the practice of one or more of the drugless professions, and who, for one year next preceding the date upn which this Act becomes effective has been licensed to and has been continuously engaged in the practice of his said profession in this State, and who has used in said practice four or more of the branches of naturopathy, such as electrotherapy, hydrotherapy, manipulation, mechanotherapy, etc., may within ninety days after the effective date of this Act, make application to the board for a license to practice naturopathy in this State under the provisions of this Act; said application being accompanied by a fee in sum of Twenty-five ($25) Dollars, which shall be paid to the secretary-treasurer of the board. If the board finds that said applicant is qualified under the provisions of this section, it shall forthwith grant to said applicant a license to practice naturopathy in this State under the provisions of this Act.

Sec. 40. Licenses issued under Section 39 hereof shall not give the holder thereof the right to practice minor surgery and anesthesiology. . . .

Sec. 42. The board may issue qualified licenses to practice one or more branches of naturopathy. For this purpose the board shall prescribe the requirements and adopt rules and regulations governing the classification and the issuance of licenses to qualified applicants.

The board shall charge an annual license fee of not more than $10 for each qualified license. Provided, however, that a qualified license may not be issued to qualify such licensees to practice more than two of the several branches of naturopathy. . . .

Sec. 44. The annual renewal license fee to practice naturopathy is Ten ($10) Dollars per year or any part of said period. A valid, unrevoked, and unforfeited license shall constitute the holder thereof a member of the Association for the year for which the fee is paid. . . .

Sec. 63. Naturopathic physicians licensed under this Act shall have, in the practice and conduct of their profession, all the rights and privileges of any and all other practicing physicians of any school or class or division in the treatment of any and all diseases, injuries, deformities, or other mental or physical conditions, and shall have all the rights and privileges to

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Editor's Note.—The proposed Naturopathic Initiative, which will be submitted to the voters of California at the state election on November 6, is editorially commented upon in this issue on page 194.

For the information of our readers, the following excerpts are here printed. See also "Correction of Editorial Statement Regarding Chiropractic Initiative," page 209.

sign any and all certificates or papers and such reports shall be accepted by the proper officers or departments, and shall have equal rights within the scope of this Act, with other physicians in any and all institutions supported wholly or in part by public funds and shall have all the rights and privileges accorded to physicians and/or surgeons as set forth in the "Workmen's Compensation Insurance and Safety Act" of 1913, and the "Workmen's Compensation Insurance and Safety Act of 1917" with subsequent amendments and other laws supplementary to the compensation and safety provisions, and shall have the right to report and certify births and deaths.

Sec. 64. Naturopathic physicians licensed under this Act may use the following terms of designation: "Doctor of Naturopathy," or its abbreviation, "N. D.," or "Naturopath," "Naturopathic Physician," or any term or abbreviation thereof relating to naturopathy or any of the branches thereof. . . .

Sec. 67. Nothing in this Act shall be construed to interfere with the rights, powers, and duties of persons licensed under the Osteopathic Act, the Optometry Law, and the act entitled, "An Act prescribing the terms upon which licenses may be issued to practitioners of chiropractic, creating the State Board of Chiropractic Examiners and declaring its powers and duties, prescribing penalties for the violation hereof, and repealing all acts and parts of acts inconsistent herewith," approved November 7, 1933.

Sec. 68. Subject to the provisions of Section 67 neither the State Board of Medical Examiners nor any other board or agency of the State shall grant any license to practice naturopathy or drugless healing or any drugless practitioner's certificate. . . .

Sec. 72. If any section, subsection, sentence, clause or phrase of this Act is for any reason held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this Act. The people hereby declare that they would have passed this Act, and each section, subsection, sentence, clause and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases may be declared unconstitutional. . . .

OBSERVATIONS ON THE EPIDEMIC OF POLIO-ENCEPHALITIS IN LOS ANGELES, 1934*

E. C. Rosenow, M. D., Division of Experimental Bacteriology; F. R. Heilman, M. D., Fellow in Surgery; The Mayo Foundation; and C. H. Pettet, M. D., Los Angeles County General Hospital: A preliminary study made in Rochester of the nasopharyngeal swabbings of patients suffering from poliomyelitis, nasopharyngeal swabbings of well persons, and other material suspected to contain the causative agent of poliomyelitis (kindly sent us from Los Angeles by Dr. Hugh T. Jones), made a further study of the epidemic by our methods extremely desirable. Green-producing, often extremely pleomorphic streptococci having characteristic neurotropic cataphoretic velocity, peculiar localizing and symptom-producing power on suitable injection of animals, and specific serologic properties, were isolated from most of the swabbings and from each of the other materials received.

Precipitin reactions between the cleared sodium chlorid solution extracts of nasopharyngeal swabbings and the encephalitis and poliomyelitis antistreptococcus serums were carried out. These were positive with about 75 per cent of the specimens of material from patients and with about 75 per cent of that from normal persons living within the epidemic zone. In contrast, only 8 per cent of well persons, swabbed as controls in Rochester, gave positive results. The streptococci were agglutinated, often in high dilution, by these serums. The antiserums neutralized the toxins contained within the heat-killed streptococci as measured by skin tests on susceptible persons. It appeared certain that these strains of streptococci must have etiologic significance, and that they belonged in a group between those isolated by one of us during studies of typical epidemics of poliomyelitis[1,2,3] and those isolated during a study of the epidemic of peculiar encephalitis in St. Louis.[4,5] Our study in Los Angeles was made possible through the kind intervention of Dr. Clarence G. Toland, president of the California State Medical Association, the offer of facilities at the Los Angeles County General Hospital by Dr. P. Berman, medical director, and the financial support of The Mayo Foundation.

EPIDEMIOLOGY

Through the kind coöperation of Dr. J. L. Pomeroy, Health Officer of Los Angeles County, and of Dr. George Parrish, Health Officer of the city of Los Angeles, we learned soon after our arrival on June 26, 1934, (1) that the outbreak occurred rather suddenly during unusually early, hot weather in May; (2) that the peak had passed; (3) that the disease was not diffusely distributed throughout the county and city, but that it was extremely high in some places, especially in the city of Belvedere and on Bunker Hill and County Hospital areas in Los Angeles and low in other areas such as Beverly Hills, Hollywood, and the harbor district; (4) that the disease remained fairly well localized to Los Angeles County; (5) that there was an unusually high incidence of multiple cases in family and other groups, often occurring almost simultaneously; (6) that there were relatively more cases among the middle class than among the poor, especially among those residing in the city; and (7) that the mortality rate and incidence of paralysis fortunately was very low.

The usual precautions calculated to minimize the spread of the disease had been taken. Patients, as soon as the diagnosis was made, were taken to the General Hospital or were quarantined. About 80 per cent of the milk supply of Los Angeles County and city was pasteurized. Bacteriologic tests of the water supply by standard methods were made in large numbers by the water and health departments, and whenever indicated by the abnormally high colon bacillus count the water was chlorinated. We were especially impressed by the unusually large number of cases that occurred without a history of contact, by the high incidence of cases in the upper stories of apartments or nurses cottages, on high levels or hills, and on the high sides of streets along hillsides.

CLINICAL OBSERVATIONS

The disease picture was very different from that found during the usual epidemics of acute anterior poliomyelitis or infantile paralysis (Heine-Medin disease). It attacked mainly older children and young adults (one-third of the patients were from eighteen to thirty years of age) instead of infants and children less than five years of age. Weakness of muscles was common, but marked flaccid paralysis was extremely rare. An outbreak of gastro-enteritis, followed often by symptoms of mild encephalitis, occurred prior to the epidemic. The disease at the onset consisted of an acute, usually relatively mild, infection of the upper part of the respiratory tract, followed by, or associated with, symptoms suggesting involvement, in varying degrees in different cases, of, respectively, the anterior and posterior horns, the brain, the dura especially

* Presented at Mayo Foundation staff meeting July 18, 1934. Excerpts from a reprint of the Mayo Foundation for Medical Education and Research.

1 Rosenow, E. C.: An Institutional Outbreak of Poliomyelitis Apparently Due to a Streptococcus in Milk, Jour. Infect. Dis., 50:377-425 (May-June), 1932.

2 Rosenow, E. C., Rozendaal, H. M., and Thorsness, E. T.: Acute Poliomyelitis—Studies of Streptococci Isolated from Throats and Raw Milk in Relation to One Epidemic, Jour. Ped., 2:568-593 (May), 1933.

3 Rosenow, E. C., Towne, E. E., and Wheeler, G. W.: The Etiology of Epidemic Poliomyelitis—Preliminary Note, J. A. M. A., 67:1202-1205 (Oct. 21), 1916

4 Rosenow, E. C.: The Relation of Streptococci to the Epidemic of Encephalitis in St. Louis—Preliminary Report, Proc. Staff Meetings of The Mayo Clinic, 8:559-563 (Sept. 13), 1933.

5 Rosenow, E. C.: Isolation of Streptococci in a Study of the Epidemic of Encephalitis in St. Louis, Proc. Soc. Exper. Biol. and Med., 31:285-286 (Nov.), 1933.

surrounding the roots of the sensory and motor nerves (radiculitis), and the muscles, especially of the back. The systemic manifestations were essentially those of neuropolioencephalitis with or without myositis. The incidence of abortive attacks in relation to frank cases was extremely high, estimated variously at from 10:1 to 50:1. Infection of the upper and lower parts of the respiratory tract manifested by symptoms and findings of a cold or sore throat, bronchitis, bronchopneumonia, or pleuritis; involvement of the nervous system some days after an initial attack of fever, and recurrence of fever and other symptoms during convalescence, were far more common than obtains in typical epidemic poliomyelitis. The onset was generally abrupt, often with symptoms of gastro-enteritis. Malaise, headache often frontal and severe, with or without vertigo, low lumbar backache, vomiting sometimes projectile, usually with marked diarrhea sometimes suggestive of ulcerative colitis, mild fever followed soon by a normal or subnormal temperature in mild cases, pain in muscles, muscular twitching, tingling sensations in the extremities, or actual muscular weakness, were common initial symptoms. In abortive cases recovery from initial symptoms without evidence of involvement of the nervous system usually ensued. In frank cases there was rigidity of the neck and spine, and pain often severe along the spine and in the muscles of the neck and back, associated with painful spasm of the muscles of the back and lower extremities and sometimes spasms of the diaphragm and abdominal muscles (hiccough); a feeling of great exhaustion and general weakness soon followed. The following were common and often persistent manifestations: inability to void urine early in the attack, due to spasm of the urinary bladder and sphincter, later transient incontinence of urine; distention and girdle-like pains in the abdomen, with vomiting, often resembling paralytic ileus and sometimes resembling attacks of appendicitis, or pain in the region of the heart, extending down one or both arms, sometimes resembling attacks of angina pectoris; increased tonus, rigidity or spasm of the muscles of involved extremities, and pain, often severe, on movement of muscles. The tenderness of muscles and cutaneous hyperesthesia frequently lasted from three to five weeks and often required morphin for relief. Photophobia, pain behind the eyeballs, congestion of the conjunctivae and blurred vision and diplopia, often transient, were common during the early stages of the disease. Lethargy, ptosis of eyelids and disorientation of mind were extremely rare. Paresthesia, due to involvement of nerve roots or posterior horns, fibrillary twitchings, early atrophy of muscles, lesions of the skin resembling toxic erythematous nodes, facial palsy, paresis, often transient, of the muscles of the pharynx and extremities, occurred in varying degrees of severity. Recovery from weakness following early application of orthopedic measures was unusually marked and often complete. There were extreme variations in type of disease, from mild transient weakness, often associated with great pain, to an occasional rapidly fatal, usual primary case of bulbar paralysis. The deep reflexes were nearly always hyperactive, often extremely so, in the early stages and nearly always mildly so, or normal, even in cases in which there was complete inability to move one or more extremities. Diminution, or loss of reflexes, so helpful in the diagnosis of typical poliomyelitis, was of little or no diagnostic aid in this epidemic. The cell count and other features of the spinal fluid were of little diagnostic or prognostic importance in this epidemic. There was no cellular increase in more than half of the cases, which is in sharp contrast to the great value of findings on the spinal fluid during typical epidemics of anterior poliomyelitis. In studies of many cases, in different epidemics of poliomyelitis, made by one of us,[6,7] a spinal fluid free from cells in a suspected case, even as early as eight hours after onset of symptoms, has, with only few exceptions, been correctly interpreted as proof that anatomic poliomyelitis was absent, and that paralysis would not occur. In the few exceptions, slight paralysis developed, which seemingly was arrested by the immediate administration of the poliomyelitis antistreptococcus serum. The chief value derived from spinal punctures in this epidemic was the relief of headache, due, in part, to increased pressure, often irrespective of whether fluid did or did not contain cells.

BACTERIOLOGIC FINDINGS

The bacteriologic results obtained in Rochester were repeated and greatly extended in Los Angeles. Green-producing, often extremely pleomorphic, streptococci having characteristic neurotropic cataphoretic velocity, and peculiar virulence were isolated almost constantly from nasopharyngeal swabbings of persons in the acute stage of the disease, often in later stages of the disease; commonly organisms of this type were isolated from well persons residing within the epidemic zone. They were isolated in pure cultures from the blood in three of five cases, from the urine in seven of ten cases, and from the stools in five or seven cases. Streptococci or diplococci, often extremely plemorphic, were found in stained films of the highly concentrated sediment of the spinal fluid drawn early in the disease, in nineteen (82 per cent) of twenty-three cases in which the cell count was five or more, and in twenty-five (45 per cent) of fifty-four cases in which the cell count was less than one. Cultures, chiefly in freshly prepared dextrose-brain broth and incubated spinal fluids, after a small amount of dextrose-brain broth had been added, yielded the streptococcus in twenty-six (60 per cent) of forty-three cases in which the spinal puncture was made early in the attack. It was never isolated from cultures of cell-free fluids in negative or late cases. In one case, in the acute stage of the disease the streptococcus was isolated simultaneously from the nasopharynx, blood, spinal fluid and urine, and the several strains isolated produced typical symptoms and lesions in animals. It was isolated in pure culture on four occasions from the emulsion of the glycerolated brain and spinal cord of two patients who died of acute bulbar poliomyelitis, and once from the Berkefeld V-filtrates of these emulsions. Streptococci similar in virulence and other properties were isolated with great regularity from the materials suspected to contain the causative agent.

Through the kindness of Dr. N. G. Evans we obtained postmortem material from two patients who died of symptoms of acute bulbar poliomyelitis. Examination was made within a few hours after death. Microscopic examination of sections of brain and cord revealed strikingly marked congestion of the capillaries of the brain and patchy areas of cellular infiltration. In addition to the typical infiltration and other lesions of the anterior horns, far greater involvement was found of the posterior horns than is usual in similar cases in which patients succumb during epidemics of typical poliomyelitis. Sections stained by a modification of the Gram method, and in which only partial decolorization with alcohol was carried out, revealed unmistakable pleomorphic diplococci and other forms identical to those found in the sediment of the spinal fluid and in cultures from various sources.

Some of the strains isolated from the nasopharynx, blood, spinal fluid, urine and spinal cord, and most of the strains isolated from sources other than persons, were heat-resistant, remaining viable and of unabated specific virulence after heating in milk at 63 degrees centigrade for thirty minutes. Fortunately, nearly all strains were killed after heating in milk to 70 to 75 degrees centigrade for thirty minutes. On the basis of this heat-resistance we tried heating to 63 degrees centigrade for thirty minutes badly contaminated material, such as feces and sewage, and succeeded in isolating the streptococcus before it had lost its specific properties and virulence as would likely have occurred if the usual plating methods had been employed. . . .

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6 Rosenow, E. C.: Streptococci in the Spinal Fluid in Acute Epidemic Poliomyelitis—Preliminary Report, J. A. M. A., 91:1594-1595 (Nov. 24), 1928.

7 Rosenow, E. C., and Nickel, A. C.: Treatment of Acute Poliomyelitis with Poliomyelitis Antistreptococcus Serum. Results from 1921 to 1925. Am. Jour. Dis. Child., 33:27-49 (Jan.), 1927.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VII, No. 12, September, 1909

From some editorial notes:

Dry Heat in Gynecology.—The value of various physical agencies in the treatment of disease has been recognized for many years, but for the development of physical therapeutics in the modern sense we are indebted to the investigations of the past decade. To Bier particularly we owe much for placing certain phases of the subject on a rational and scientific basis. . . .

From an article on "Chronic Colitis" by Dudley Fulton, M. D., Los Angeles.

This paper is a résumé of one hundred and fifty-eight cases of chronic colitis. Only those cases are included in this series in which the disease was limited to the large bowel. . . .

From an article on "The Treatment of Mucomembranous Colitis from the Standpoint of Its Bacterial Origin" by Ray Lyman Wilbur, M. D., Palo Alto.

Mucomembranous colitis occupies a peculiar position among the more chronic ailments with which the physician has to deal, in that, while often a prompt curative result follows treatment, just as frequently an apparently similar case handled along the same lines or by other careful measures remains practically unchanged. . . .

From an article on "A Phase of Unequal Inspiratory Murmur" by T. C. Edwards, M. D., Salinas.

I wish to call your attention to what I might term an accentuation of the inspiratory murmur which is synchronous with the action of the heart. . . .

From an article on "The Immediate Removal Treatment of Morphin Habituation" by R. E. Bering, M. D., Tulare.

At our meeting held at Riverside in 1905 I presented a short paper on the method of treating patients with hyoscin hydrobromate for the morphin habit. At that time I gave the members all the information I then possessed. During the time that has intervened I have received many letters from different sections of the country asking for more detailed information. . . .

From an article on "Rheumatism—Its Relation to Diseases of the Throat" by B. F. Walker, M. D.

In presenting this paper, I have selected a subject that is of interest, alike to the general practitioner and the specialist, and one especially in this vicinity, is a condition that comes under our notice very frequently. . . .

Department of Tropical Medicine in Oakland College of Medicine:

The intimate trade relationships now existing between the Pacific Coast and tropical and semi-tropical countries, and the still more intimate relationships that will spring out of the opening of the Panama Canal render unnecessary any special arguments concerning the necessity of the study of tropical diseases in all

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and new members.

(Continued in front Advertising Section, Page 18)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

By Charles B. Pinkham, M. D.
Secretary-Treasurer

News Items

"Aris Amaral, self-styled 'divine healer,' must spend 180 days in jail on his conviction of practicing medicine without a license. . . . The healer was charged with treating beautiful women in his 'Temple of Isis' in Hollywood. . . ." (Los Angeles *Evening Post,* July 28, 1934.)

"After serving only seven months of a three-year sentence for manslaughter, after he pleaded guilty to an illegal operation on a Mexican woman, which caused her death, Doctor Castillio was released from the county jail yesterday by Superior Judge F. A. Leonard after Probation Officer George Larmore recommended the modification of sentence and the District Attorney approved it. . . . Doctor Castillio will be subject to rigid rules during his probation, Judge Leonard stated." (*Orange Belt News,* San Bernardino, July 18, 1934.) (Previous entry, January, 1934.)

"Seeking to cope with the sudden development in Los Angeles of more than a score of assertedly fraudulent insurance company promotions, District Attorney Buron Fitts yesterday created a new investigational division in his office, to be known as the Insurance Fraud Department. The three department members—Deputy District Attorney David L'Esperance and Investigators Harry M. Owens and Stephen Nowakowski—immediately plunged into an investigation of complaints indicating that nearly $500,000 in worthless insurance may have been sold here by uncapitalized and unlicensed companies during the last eighteen months. . . . Small 'mutual' life insurance concerns, policyholders of which are asserted to pay benefits to the relatives of deceased policyholders, will form one general subject of inquiry and 'accident and health' insurance concerns, selling policies on alluring representations which they assertedly cannot fulfill, will form another, L'Esperance said. . . ." (Los Angeles *Examiner,* July 20, 1934.)

"Launching a drive to rid Los Angeles of assertedly fraudulent 'health insurance' enterprises, District Attorney's investigators late yesterday raided the offices of the International Travelers' Health Association at 1058 South Grand Avenue. . . . The two men, Benjamin Balos, reputed organizer of the Association, and J. W. Lee, who succeeded Balos as president, were charged with conspiracy to commit petty theft and conspiracy to conduct an insurance company without a license. . . . The complaint specifically charged that the two officers and their agents took more than $1,000 from twenty-six asserted victims, in return for health and accident policies, which the prosecutor alleged were of no value. . . . The State Medical Board and the Los Angeles County Medical Association were instrumental in supplying evidence for the proposed prosecution. . . ." (Los Angeles *Examiner,* July 13, 1934.)

"Arrested by State Narcotic Officers, Paul Wright, 1042 West Twenty-fourth Street, was turned over to federal authorities this week for prosecution on charges of violating the Harrison Narcotic Act. . . . According to officers, the physician had prescribed

* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

(Continued in front Advertising Section, page 21)

THIS YOUNG MOTHER IS ABOUT TO MAKE A MISTAKE

THIS mother went to her doctor to get an infant feeding formula. The doctor wrote the formula—using evaporated milk as the chief ingredient—and sent the mother on her way with a friendly warning—"Follow these instructions to the letter!"

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Seven letters, B-O-R-D-E-N-S.

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Alameda Mosquito Abatement District Reports.—The Alameda County Mosquito Abatement District, of which Harold F. Gray is engineer, has issued its report for the calendar year 1933. This consists of twenty-four mimeographed pages and provides detailed information relative to the operations, costs and methods used in the program of the district.

Alameda County has two distinct mosquito problems. The greatest is that related to the salt marsh mosquito. There are nearly thirteen thousand acres of salt marshes within the county. The prevention of mosquito breeding in these places constitutes an engineering problem in drainage, including the maintenance of proper drainage systems. The second problem, related to fresh-water mosquitoes, is a matter of minute detail. There are thousands of comparatively small breeding places scattered throughout the county. Public utility street vaults, sewer catch basins, creek beds, dairy drains, cesspools, road gutters, fish ponds, cemetery urns, tin cans, rain barrels, tree holes, wet basements, and an infinite variety of places which contain water offer excellent breeding places for mosquitoes and must be abated through the use of a wide variety of measures. The engineer of the district states: "The uninformed person often believes mosquito abatement to be merely a matter of spilling oil here and there. Actually, it is an extensive, intricate and difficult work." The total expenditures of the district in 1932 and 1933 were $31,661, as compared with $53,121 in the previous fiscal year, a 40 per cent decrease which is reflected in the reduction of work done in 1933. Concerning the results achieved, the report reads as follows:

"Three years of intensive work are now showing definite, valuable results to the people of this county. Not only has the public health and comfort been promoted, but definite economic values have resulted. No longer do hordes of stinging insects depreciate the value of extensive areas otherwise suitable for homes. The dairy industry has received distinct benefits in

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increased milk and butter production. Outdoor recreation has been made more enjoyable. Outdoor labor, including farm work, has been made more efficient and productive. The district has returned to the people values many fold greater than their moderate cost, and there is distinct evidence that public understanding of these facts, and public interest in and appreciation of the work, is greater than at any time in the past.

"These results have been obtained in the face of decreased expenditures; in fact, the decrease now has been carried to the point of danger that the gains we have made cannot be maintained on the present basis. Necessary maintenance work has been too severely curtailed for continuously successful results, and activities against fresh-water mosquito breeding must be somewhat increased in the future.

Do Your Swimming Sanely.—Lure of cool waters, sunny beaches and soft breezes is calling many from the city to resort places. *Ohio Health News* already has printed one warning against the hazards of the most healthful of sports; but seventy drownings in the United States on the Fourth, of which three were in Ohio, make it timely to summarize a warning recently issued by the *National Safety Council* against drowning hazards, and to give a few hints to swimmers.

While there probably were fewer drownings in 1933 than in 1932, owing to absence of serious floods, the national experience each year has not been encouraging. The 1932 total was 7,712. Too little is known of the national experience for 1933 to permit a reliable estimate, but during the ten years, 1920-1929, a total of 73,733 persons lost their lives through accidental drowning.

Beginners should stay in shallow water and have the aid of an experienced swimmer. Even if one is a good swimmer, he should stay within easy range of

(Continued on Next Page)

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(Continued from Preceding Page)

a boat, raft, or near shallow water. Swimming when overheated or tired is a very dangerous practice. Likewise, it is not wise to swim until exhausted. In case of exhaustion while swimming, the swimmer should turn on his back and rest until able to return to shore.

A general rule for diving is to confine the sport to water known to be at least five feet deep. A swimmer caught in a swift current or undertow should not struggle. The current will carry him to the surface, when he should be able gradually to work his way to shore or into shallow water.

Persons who wade also should be cautious. They are advised not to wade into the water with hands above the head, for one is then unprepared for the swimming stroke should he step into a hole. Neither should he lean back when entering the water, for should he fall, he will then fall backward, instead of forward and ready to swim.

Swimmers should remember the story of the boy who called "wolf" too often. If one cries for help in fun, his call is liable to be ignored when he really needs help. Swimmers should learn life-saving and resuscitation. This knowledge may be the means of saving a life, whether stranger, friend, or someone the rescuer loves.

Cramps are one of the greater fears of those who swim. Muscle cramps are not dangerous if one will keep his head. The real danger is fear. Stomach cramps may easily be avoided. Simply do not swim until two hours after eating.

For a cramp in the calf of the leg, submerge, seize the cramped muscles with thumbs and fingers of both hands and squeeze. For a toe cramp, press on the nerve in the arch of the foot on the inside edge, about one-third the way from heel to toe. Submerge and press the place with thumbs, sliding them toward the great toe. Treat cramps in the thigh muscles in the same manner.

The swimmer who likes to "show off" is a source of peril to himself and may be to others. The man who will dive in the shallowest water he can find, or who tries to swim distances which are beyond his strength, not only endangers his own life but also the life of anyone who may go to his assistance.

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Before entering the water, the swimmer should bear in mind the fact that clear thinking in emergencies is a decided asset. Should he be overcome by fatigue or cramps, or any other cause, his behavior may either assist or hinder the person who goes to his aid. The struggles of a drowning person are proverbial for the difficulty they create. The swimmer must keep full control of his faculties and his fears, if he would assure safety for himself and any possible rescuer.—*Ohio Health News.*

Recent Progress in the Treatment of Cancer.*—Outstanding among recent advances in the management of precancerous lesions are the use of vitamin A in leukoplakia of the mouth and in keratotic lesions of the skin; renewed emphasis on periodic pelvic examinations in mothers and the early repair of any lesions found; the use of low voltage x-ray therapy, with low filtration, for the various early cancerous and keratotic lesions of the skin; and the use of the endotherm to excise and thoroughly cauterize the base of polyps of the mucous membrane, which may harbor early cancer at their base.

Important advances have been made in the radiologic treatment of epidermoid tumors, lymphoid tumors, tumors of the sex glands and the infantile kidney.

Radiologic technique has been improved by increasing the safety and the amount of irradiation through heavier infiltration, by combining interstitial and external irradiation, and by fractional doses over longer periods of time (Coutard).

A new type of irradiation has been devised, in the form of the supervoltage, deep x-ray machine.

In the posterior portion of the oral cavity and in the female cervix, combined interstitial and external

* Author's summary of article published in *Clinical Medicine and Surgery,* March, 1933.

(Continued on Next Page)

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Doctor: Send your next patient here, and you may feel assured not only that he will receive maximum benefit from his sojourn, but he will be grateful and will thank you for sending him to

SOUTHERN SIERRAS SANATORIUM

(Continued from Preceding Page)

irradiation have produced better results than interstitial irradiation alone.

About the neck, surgical resection of the metastatic nodes, after preliminary irradiation, has still further increased the number of permanent cures. External irradiation has been improved by the Coutard method of alternating ports of treatment on alternate days and giving fractional treatments each day for a period of three weeks.

In the epidermoid tumors, irradiation has been improved by controlling the treatment by microscopic grading; and in the sex-cell tumors of the testis and ovary, similar advances have been made by following the progress of treatment through the Aschheim-Zondek test.

In surgery the most recent advances include the perfection of operative technique by the use of electro-surgery for brain tumors and more adequate preoperative treatment for gastro-intestinal cases, particularly those with cancer of the large bowel. Major improvements have followed upon the more careful selection of the cases submitted to operation in all types of cancer, based upon knowledge of the degree of malignancy gained by biopsy, more careful choice between the use of irradiation and surgery or the combined treatments of irradiation and surgery; and finally upon a finer distinction between the operable and inoperable cases, based upon such factors as age, extension of the disease, the factor of pregnancy, the tumor site, histopathology, etc.

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VOLUME 41
NUMBER 4

OCTOBER · 1934

50 CENTS A COPY
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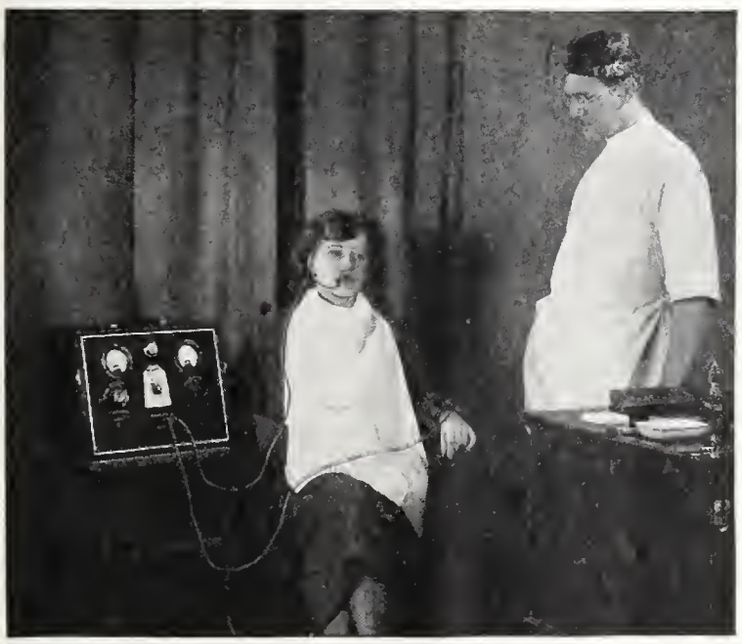

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Secretary, Allen F. Gillihan, San Luis Obispo.

San Mateo County Medical Society
President, F. Holmes Smith, San Bruno.
Secretary, H. H. Ray, 23 Second Avenue, San Mateo.

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Secretary, William H. Eaton, Health Department, Santa Barbara.

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President, C. Kelly Canelo, 505 Medico-Dental Building, San Jose.
Secretary, E. O. G. Schmitt, 608 Medico-Dental Building, San Jose.

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President, Charles A. Smolt, Box F. 1, Ventura.
Secretary, Fred A. Shore, 704 East Santa Clara Street, Ventura.

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(Roster lists continued on advertising page 6)

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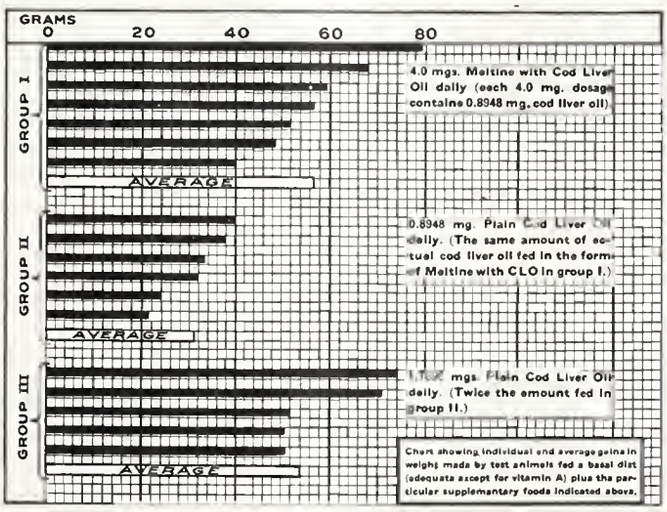

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Miscellaneous California Medical Organizations

State of California Department of Public Health

San Francisco—State Office Building, McAllister and Larkin Streets. UNderhill 8700.

Sacramento—State Office Building, Tenth and L Streets. CApital 2800.

Los Angeles — State Office Building, 217 West First Street. MAdison 1281.

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San Francisco, Rm. 512, 450 McAllister St.

Los Angeles, 812 Associated Realty Building 510 West Sixth Street

Sacramento, 420 State Office Building

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Secretary, C .B. Pinkham. Room 512, 450 McAllister Street, San Francisco.

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Secretary, Robert W. Langley, 1002 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

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Secretary, P. B. Gallegos, 242 North Sutter Street, Stockton.

Pacific Roentgen Club

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Secretary, L. H. Garland, 450 Sutter Street, San Francisco.

The Public Health League of California

Executive Secretary, Ben H. Read. San Francisco Office, 450 Sutter Street. Los Angeles Office, 438 Chamber of Commerce Building.

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For the Treatment of Tuberculosis
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LIVERMORE SANITARIUM
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Livermore. California

OAKS SANITARIUM
For Treatment of Tuberculosis
Los Gatos, California

POTTENGER SANATORIUM AND CLINIC
For the Treatment of Tuberculosis
Monrovia, California

PARK SANITARIUM
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1500 Page Street, San Francisco, California

THE RALPH SANITARIUM
For Treatment of Drug and Liquor Addictions
529 Highland Avenue, Kansas City, Missouri

SOUTHERN SIERRAS SANATORIUM
Treatment of Tuberculosis
Banning, California

SAINT FRANCIS HOSPITAL
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The Journal of the California State Medical Association and the Coöperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital, or we will refer your request to the proper department of the A. M. A. for reply.

We invite and urge you to use this Service. It is absolutely *free* to every member of the California and Nevada Associations. The Coöperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in California and Western Medicine, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This A. M. A. Service Bureau will give you the information. Whenever possible, the goods will be advertised in our pages; but if they are not, we urge you to write direct to the Coöperative Medical Advertising Bureau, 535 N. Dearborn Street, Chicago, Illinois. California and Western Medicine and the A. M. A. Service Bureau desire to serve *you*.

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BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

Bronchoscopy, Esophagoscopy, and Gastroscopy. By Chevalier Jackson, M. D., Sc. D., LL. D., F. A. C. S., Professor of Bronchoscopy and Esophagoscopy, Temple University; Bronchoscopist, Temple University Hospital; and Chevalier L. Jackson, A. B., M. D., M. Sc. (Med.), F.A. C. S., Professor of Clinical Bronchoscopy, Temple University; Bronchoscopist, Temple University Hospital. Third edition, reset. Cloth. Pp. 485, with 207 illustrations and 15 color plates. Price, $9 net. Philadelphia and London: W. B. Saunders Company, 1934.

A Textbook of Pathology. Edited by E. T. Bell, M. D., Professor of Pathology in the University of Minnesota, Minneapolis, Minn. Second edition, enlarged and thoroughly revised. Cloth. Pp. 767, illustrated with 364 engravings and two colored plates. Price, $8.50. Philadelphia: Lea & Febiger, 1934.

Big Problems on Little Shoulders. By Carl Renz, M. D., and Mildred Paul Renz. Cloth. Pp. 129. Price, $1.50. New York: The Macmillan Company, 1934.

Essentials of Histology. Descriptive and Practical for the Use of Students. By Sir E. Sharpey-Schafer, F. R. S., formerly Professor of Physiology in the University of Edinburgh. Thirteenth edition. Edited by H. M. Carleton, M. A., B. Sc., D. Phil., Lecturer on Histology in the University of Oxford, Research Fellow of New College, Oxford. Cloth. Pp. 618, illustrated. Price, $5. Philadelphia: Lea & Febiger, 1934.

BOOK REVIEWS

Obstetric Medicine—The Diagnosis and Management of the Commoner Diseases in Relation to Pregnancy. By Fred L. Adair and Edward J. Stieglitz. Philadelphia: Lea & Febiger, 1934.

The purpose of this book is to coördinate and correlate the medical knowledge concerning the problems of diagnosis, therapy, and prognosis of disease occurring coincidentally with pregnancy. There are thirty-nine contributors, presumably each being chosen because of his knowledge and interest in the particular subject about which he has written. Such an arrangement is almost a necessity in view of the wide range of subjects covered. The idea of the book is an admirable one, since there is an almost total lack of such information gathered together in one volume; although many of the associations are comparatively rare the book is just that much more valuable, for few physicians have individually encountered a sufficiently large number of even the commoner associations to permit them to form accurate and justifiable opinions regarding their proper management.

It would be impossible to discuss the various sections individually. Particularly good are the sections on the deficiency diseases, venereal diseases, syphilis, heart disease, and orthopedic diseases. Many other chapters are of special interest because few of us have had an oppor-

(Continued on Next Page)

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May: Diseases of the Eye (14th ed.)	4.00
Meaker: Human Sterility	4.00
Reeve & Cleveland: Hospital Economics	2.00

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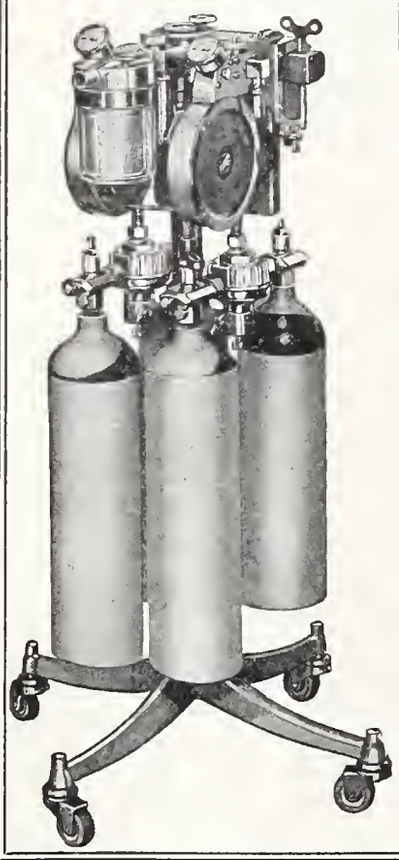

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BOOK REVIEWS

(Continued from Preceding Page

tunity to gain any but the vaguest knowledge concerning them. The sections on industrial poisonings, drug habits, and parasitic diseases, are examples.

There are several criticisms which might be made. The most glaring defect to the reviewer is the tendency of many of the contributors to go into great detail concerning the general features of the disease under discussion, often compressing comment on its relation to pregnancy to one short paragraph. For instance, there are fourteen pages devoted to lobar pneumonia, in which are discussed definition, frequency, predisposing factors, bacteriology, pathology, symptoms, physical findings, laboratory findings, course, complications, diagnosis, prognosis, treatment; two short sections, aggregating slightly less than one page, discuss relation to pregnancy and management of the pregnancy. In a book of this kind the general features of the disease require only the briefest treatment, since it is the relation of the disease and pregnancy which is of interest.

A second criticism is that the authors often fail to point out the course which they consider preferable. When there is a difference of opinion as to management, both sides are stated to be sure, but it is often not clear which course the author prefers, and why. Even a statement such as: "Now you have both sides of the question, take your pick, I don't know which is the better," would be preferable to no comment at all.

On the whole, the book is excellent for reference purposes and should be in every obstetrician's library. The editors are to be congratulated. No doubt a second edition will contain many improvements, for, in a manner of speaking, the present volume is pioneer work.

D. G. M.

That Heart of Yours. By S. Calvin Smith. Pp. 212. Illustrated. Philadelphia: J. B. Lippincott Company, 1934. Price, $2.

In the little books on diabetes and on tuberculosis, which have been so valuable to the patient, only a brief space was needed for a description of the anatomy, physiology, pathogenesis, diagnosis and prognosis of these disorders. A similar text for cardiacs offers a very different problem, and nearly half of this work is taken up with considerations other than advice to patients on the conduct of their lives. On the whole, the author has handled

(Continued on Page 14)

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BOOK REVIEWS

(Continued from Page 12)

his material well and the book can be regarded as useful to many cardiacs, if not for those with fear of heart disease. It may still be urged that it is possible to write for the patient with organic heart disease without going into detailed discussion of symptoms, signs, and diagnosis.

W. D.

Periodic Fertility and Infertility in Women (Die Periodische Fruchtbarkeit und Unfruchtbarkeit des Weibes). By Hermann Knaus. Pp. 147. Vienna: Wilhelm Maudrich, 1934. (In German.)

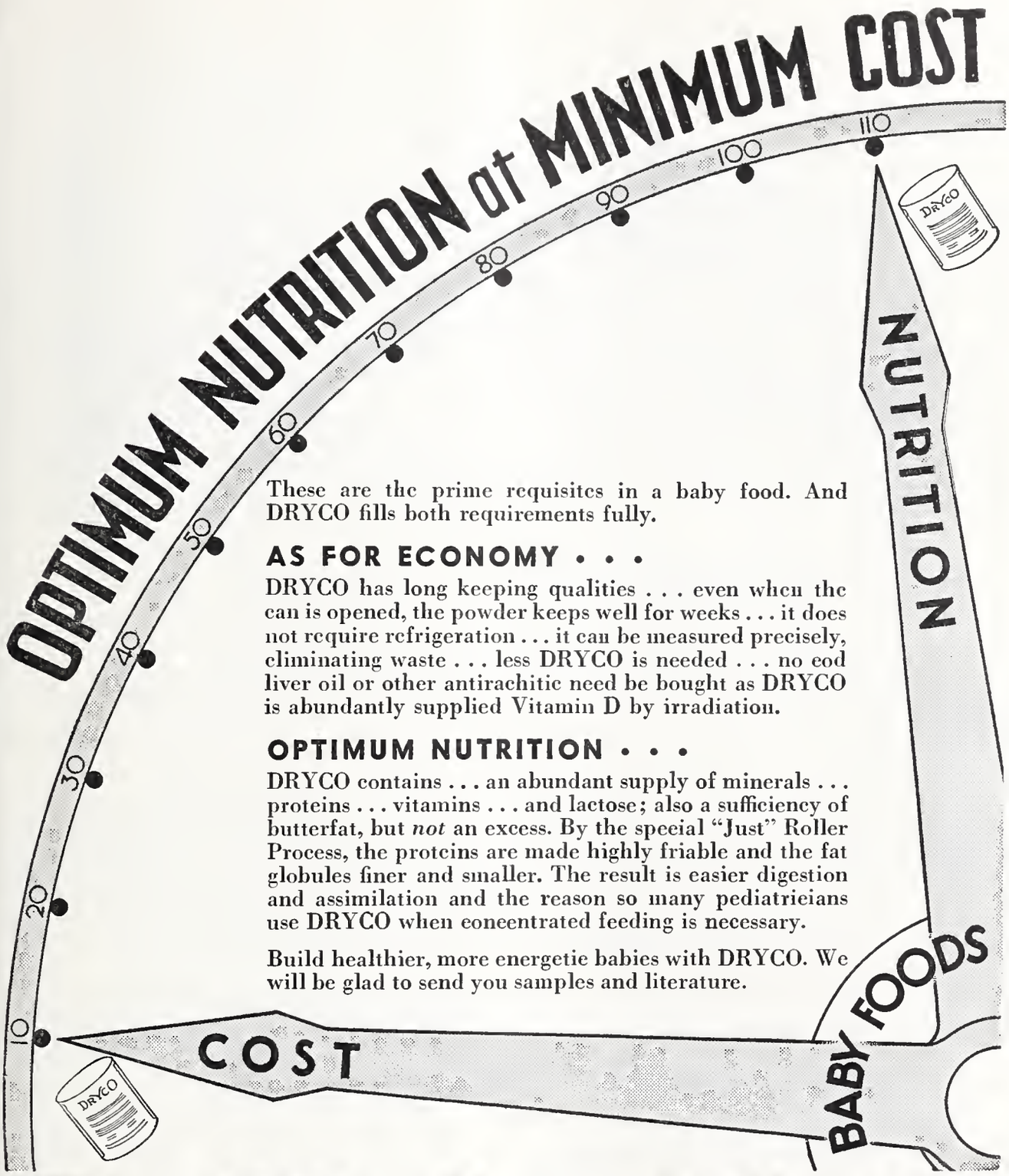
In this monograph Knaus has gone extensively into the physiology of the spermatozoön and the egg. Only about half of the thesis deals with the much disputed question of natural or controlled sterility in the female. Knaus contends that every female, regardless of the species, has its fertile and unfertile periods. He shows a number of tables in which the relation of ovulation to cohabitation and menstruation has been recorded. It is pointed out that the period of fertility varies with the type of the menstrual cycle. Because of this variability, methods of estimation for fertile periods are proposed. The author is convinced that if these rules are observed in estimating these periods, periods of safety from conception can be readily determined. He also offers this means of determining the fertile period as an important aid to the study of sterility.

After reading this monograph, one cannot help but feel that the author overemphasizes the safety of so-called willful sterility or controlled fertility and minimizes the accompanying difficulties in carrying out measures proposed by him. Nevertheless, this thesis offers many interesting discussions and deserves widespread attention. The English translation of the publication has been announced and should appear shortly. L. A. E.

Surgery of a General Practice. By Arthur E. Hertzler and Victor E. Chesky. Pp. 602. Illustrated. St. Louis: The C. V. Mosby Company, 1934.

This 580-page book by Hertzler and Chesky on the "Surgery of a General Practice" is an expanded edition

(Continued on Page 16)



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BOOK REVIEWS

(Continued from Page 14)

of their book on minor surgery. It is intended to serve the average medical man as a comprehensive guide. For in so far as the ailing public is concerned, the authors seem to feel that if the family doctor would but enlarge his sphere of usefulness fewer patients would receive treatment at the hands of specialists.

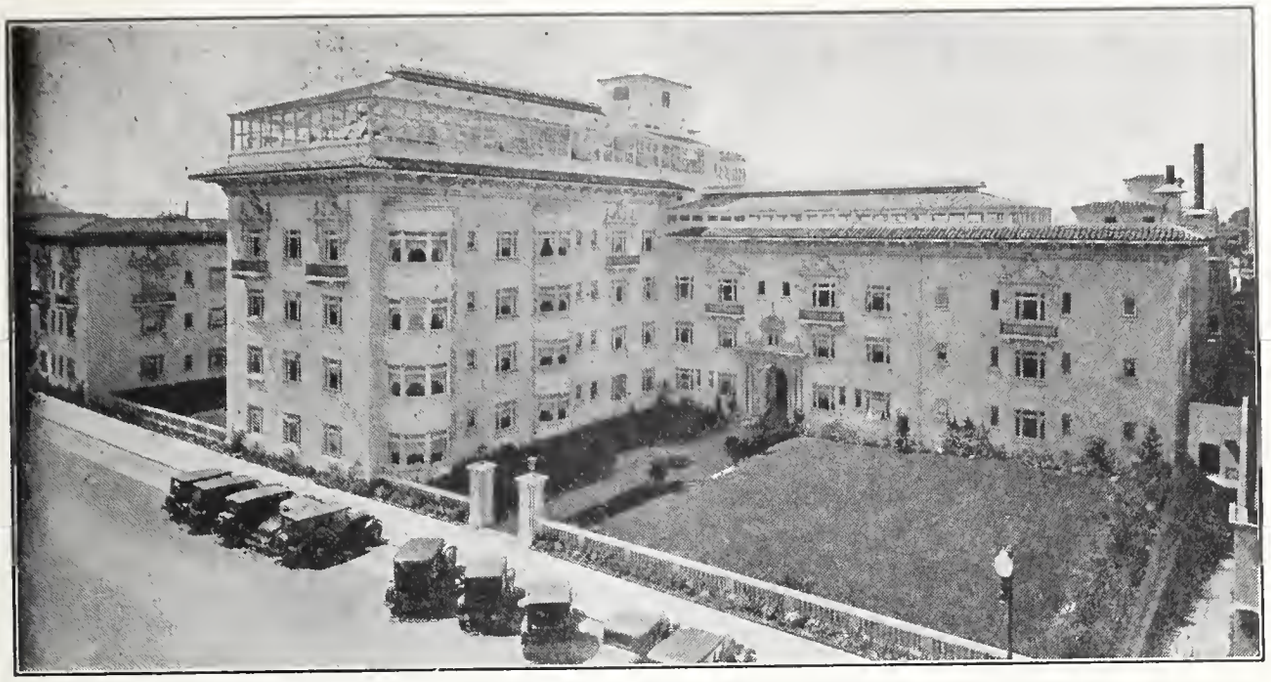
The subjects dealt with cover virtually the entire field of surgery. For example, there are chapters on bandaging, closing of wounds, surgical technique, tumors, injuries, and deformities; other chapters describe diseases of the nose, mouth, chest, mammary glands, anal region, male genitals and female genitals, while five chapters are devoted to the special surgery of wounds, infections, etc. The book contains 470 illustrations; and since the print is large, it follows that but little space is devoted to any one subject. Although the material presented is interesting as far as it goes, in a book of this size one would prefer more detailed descriptions of fewer subjects.

In discussing the treatment of scalp wounds the authors advise careful cleansing of the wound and accurate apposition of the edges, pointing out, however, on page 83, that if the wound is through the scalp the infection may spread very widely. Nevertheless, despite the danger inherent in such a practice, the illustration on page 85 shows a wound through the scalp tightly closed. The incisions recommended on pages 409 and 411 for the treatment of infection of the finger seem objectionable. The incisions shown appear to extend down the entire length of the finger in the center of the palmar surface, the tendons being completely exposed. But the lateral incision seems preferable because it can be made without injuring the pulleys of the tendons. The incision for palmar abscess, shown on pages 411 and 412, crosses the palmar creases at right angles. Such a procedure is apt to leave a painful and disabling scar. Experience proves that smaller incisions are adequate and less disfiguring.

G. D. D.

A Manual of Diseases of the Nose, Throat, and Ear. By E. B. Gleason. Seventh edition. Pp. 651. Illustrated. Philadelphia and London: W. B. Saunders Company, 1934. Price, $4.50.

New material has been added in this seventh edition and less important matter omitted to keep it within the size of a manual. It is a conservative text advancing some disproved theories and practices.



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Among the errors noted were that on page 55 the Vidian nerve is called a branch of the sphenopalatine ganglion to the nasal septum and the superior turbinate; and that on page 185, the eighth nerve is said to lie laterally to the pharynx. On page 139, transillumination is said to be more reliable than x-ray of the nasal sinuses. Forcing air into a child's nose, as advised on page 66, and politzerization in acute purulent otitis media as suggested on page 428, are among the questionable practices noted.

J. A. B.

TWENTY-FIVE YEARS AGO

(Continued from Text Page 288)

From an article on "Momberg's Tubing Applied as a Tourniquet for Bloodless Surgery of the Pelvis" by George K. Herzog, M. D., San Francisco.

The compression of the abdominal aorta as a method of arresting hemorrhage is not new or untried. The great difficulty heretofore has been the method. . . .

From an article on "Vaccines" by Pauline Nusbaumer, M. D., Oakland.

This résumé is in part an answer to many inquiries made to Doctor Archibald and myself concerning the nature of the cases for which we have made vaccines and the results obtained. . . .

From an article on "On the Injection of a Paste Containing Bismuth Subnitrate for the Cure of Tuberculous Sinuses and Cavities" by Samuel J. Hunkin, M. D., San Francisco.

Last February my attention was called in a private letter to an experiment of Beck of Chicago, who in an attempt to picture the ramifications of sinuses around an old tuberculosis joint, injected a paste of bismuth and vaseline and found, to his surprise, that the sinus closed on the filling. . . .

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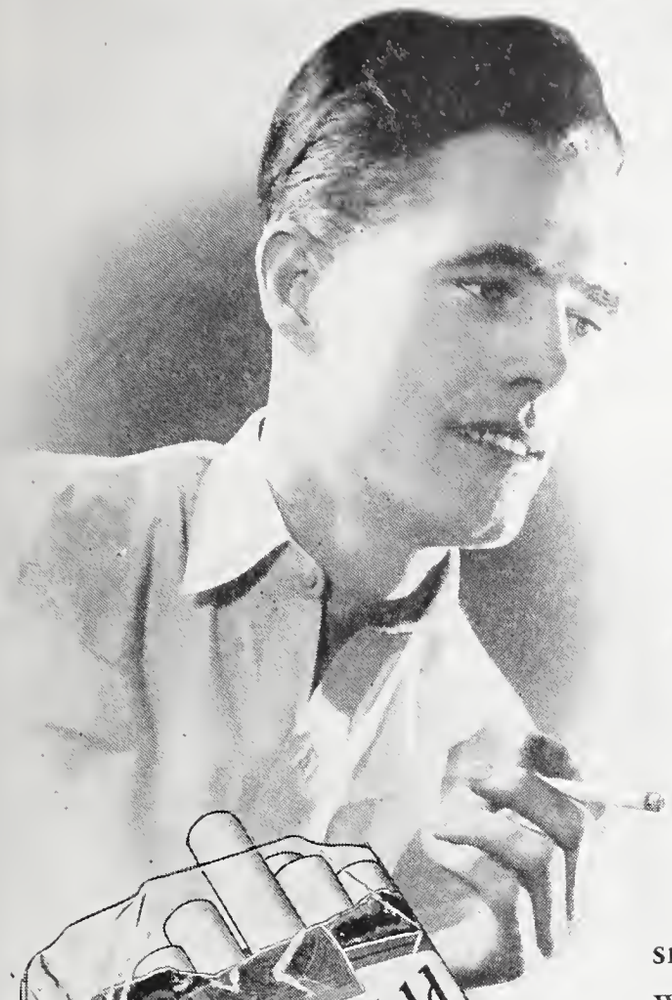
(Continued on Page 21)



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1911

"The limits of assimilation of the different sugars vary and are as follows:

"Grape sugar: In babies, about 5 grams per kilogram (Langstein and Meyer).

"Grape sugar: In one-month baby, 8.6 grams per kilogram (Greenfield).

"Galactose: No accurate data.

"Levulose: (Lower for babies than adults.) One gram per kilogram (Keller).

"Maltose: Over 7.7 grams per kilogram (Reuss).

"Lactose: 3.1-3.6 grams per kilogram (Grosz).

"Cane sugar: Probably about the same as lactose (Reuss)."—*J. L. Morse, and F. B. Talbot: Physiology and pathology of the digestion of the carbohydrates in infancy, Boston M. & S. J., 164:852-855, June 15, 1911.*

1912

"Maltose has for many years been considered one of the most valuable of infant foods in modifying milk formulas; but the German school in the last few years has called special attention to the value of this sugar as a substitute for milk and cane sugars in conditions of intestinal fermentation. It is more easily assimilated and more rapidly absorbed than lactose or saccharose and it may be taken therefore by the infant in larger quantities without producing sugar fermentation."

"Maltose is especially indicated in the feeding of very young and delicate infants, and in all cases where either milk or cane sugar has produced intestinal fermentation and sugar intoxication. In the feeding of maltose it has been found advisable to combine it with about equal parts of dextrin. In Germany, and later in this country, 'Soxhlet's Nahrzucker' (which contains maltose 52.44 per cent., dextrin 41.26 per cent., and sodium chlorid 2 per cent.) has been largely used. Mead's Dextri-Maltose (malt sugar), which contains about equal parts of dextrin and maltose, is a similar preparation which may be used instead of milk sugar or cane sugar for modifying milk mixtures."—*B. K. Rachford: Diseases of Children, D. Appleton & Co., New York, 1912, p. 125.*

1913

"It is well to start with one ounce (albumin milk, or albumin-buttermilk) to every pound of body-weight in the twenty-four hours, increasing gradually until two or three ounces to the pound of body-weight are being given. Then add sugar, preferably a malt sugar, about one-fourth of an ounce at a time to the twenty-four-hour quantity, until an ounce or an ounce and a half is being given."—*J. Foote: Principles of treatment in malnutrition and atrophy of infants, Interstate M. J., 20:1913, No. 6.*

1914

"Milk sugar and cane sugar may be used in infant feeding, but my preference is for malt sugar. Mead and Johnson put up a convenient preparation which they call Dextri-Maltose and which consists of maltose 51 per cent., dextrin 47 per cent., sodium chloride 2 per cent., and which has a food value of about 110 calories per ounce."—*J. A. Gannon: Whole milk dilutions in feeding normal infants, Washington Med. Annals, 13:38-43, Jan., 1914.*

1914

"Dextrin-maltose causes the greatest gain in weight, cane sugar less, and lactose produces the least gain."—*M. S. Reuben: Observations on milk station infants, Arch. Pediat., 31:176-196, March, 1914.*

1914

"A composite opinion of the sugars is in favor of dextri-maltose, milk sugar and cane sugar in the order named."—*R. A. Strong: Essentials of modern artificial feeding of infants, Lancet-Clinic, March, 14, 1914.*

1914

"Experiments show that sugars vary in their rate of absorption, some being assimilated rapidly, while others distribute their nutriment over a longer period. For example, maltose is most promptly assimilated, cane sugar next and milk sugar slowest."

"The condition in which dextri-maltose is particularly indicated is in acute attacks of vomiting, diarrhea and fever. It seems that recovery is more rapid and recurrence less likely to take place if dextri-maltose is substituted for milk sugar or cane sugar when these have been used, and the subsequent gain in weight is more rapid.

"In brief, I think it safe to say that pediatricians are relying less implicitly on milk sugar, but are inclined to split the sugar element, giving cane sugar a place of value, and dextri-maltose a decidedly prominent place, particularly in acute and difficult cases."—*W. D. Hoskins: Present tendencies in infant feeding, Indianapolis M. J., July, 1914.*

1915

"In the severe cases (of diarrhea) he (Benson) uses Finkelstein's casein milk with malt sugar. He also believes that dextri-maltose is to be preferred to milk sugar or any other sugar, as the infants gain more rapidly and digest more easily this form of sugar."—*R. A. Benson: Observations on 1,500 artificially-fed infants, Med. Century, Feb., 1915, p. 33; abst. Arch. Pediat., 32-556-557, July, 1915.*

1915

"Until very recently we have taken it for granted that milk sugar was the best, but now many consider that malt sugar is even better. However, the malt sugar is not used in its pure state, but in the form of extracts, as dextri-maltose."—*E. B. Lowry: Your Baby, Forbes & Co., Chicago, 1915, p. 162.*

1915

"Cane-sugar (saccharose), like most of the other disaccharids, is not absorbed as such, but must first be split by the invertase of the intestinal secretion into the two glucoses, dextrose and levulose, which are readily absorbable. Maltose (malt-sugar) occupies an exceptional position among the disaccharids, in being partly absorbable as such. This is probably due to the fact that it can be split not only by the maltase of the digestive juices, but also by the same ferment being present and active in the circulating blood (Chittenden and Mendel)."

"Anticipating a little, we may mention that all cases, in which lactose may advantageously be replaced by other carbohydrates, are pathological, and without exception the result of unsuccessful attempts at artificial feeding; they will therefore be discussed under that head.

"Dextrin, intermediate between sugar and starch, is physiologically nearer to the former; we shall have occasion to see that, under certain conditions, it may supplement sugar very advantageously. Given together with maltose, it materially delays the fermentation of the latter; Stolte observes that the more complex the carbohydrate the longer fermentation is postponed."

"All malted foods contain dextrin, and there is reason to believe that their value largely depends on their being somewhat complicated; such, at least, is the opinion of Usuki and Stolte, who believe that a mixture of carbohydrates is more slowly absorbed than a pure sugar, and therefore tends to check fermentation in the intestine. Southworth explains the matter more definitely, by attributing the antifermentative action entirely to the dextrin, which is not fermentable as such, but only after it has been split into maltose, a process that takes place only gradually, and in the later stages of digestion."

"I make it a rule to give the ordinary formula with dextrin-maltose whenever the usual milk or cane-sugar mixtures seem to cause excessive fermentation and colic, or are attended with the evacuation of soap stools. I decidedly prefer this, as a preliminary measure, to going over at once to some very low fat combination, which can only be a temporary makeshift at best. I also find dextrin-maltose an excellent addition to albumin-milk when the first object of that food has been achieved and a gain in weight is desired; in this way I have succeeded in feeding albumin-milk far beyond the period usually advised, with highly gratifying results."—*F. L. Wachenheim: Infant-Feeding; Its Principles and Practice, Lea & Febiger, Phila., 1915, pp. 31, 33, 146, 158.*

1915

"The infant with diarrhea and vomiting is given nothing but tea for from twelve to twenty-four hours, no longer, and then the albumin milk is commenced, not over 5 gm. ten times a day, with 3 per cent. of a maltose-dextrin mixture. The amount of albumin milk is increased by 50 gm. each day until the daily ration totals 300 gm. After the weight has become stationary, carbohydrates can be added up to 5 per cent. of the maltose-dextrin mixture."

"Albumin milk is not so uniformly effectual in dysenteriform diarrhea as in cholera infantum. Whey seems to act better, diluted half and half with oatmeal gruel. After the starvation period he gives 50 gm. of the whey and increases by 50 gm. daily with equal amounts of oatmeal gruel. As improvement sets in 3 per cent. of a dextrin-maltose preparation can be added."—*L. Langstein: Cholera infantum and other severe diarrheas in infants, Therap. Monatsh., V. 29, August, 1915; Abst. J.A.M.A., 65:1314, Oct., 7, 1915.*

1916

"Dextri-maltose, having a higher absorption tolerance than the other sugars, is less likely to cause intestinal disturbances when large amounts of it are given."—*H. R. Mixsell: A brief résumé of the role of carbohydrates in infant feeding, Arch. Pediat., 33:31-36, Jan., 1916.*

1916

In cases of malnutrition, and indigestion in infancy, "The appetite improves rapidly, and the stools soon become normal in appearance, if the sugars are intelligently prescribed. By this I refer to proper proportions of dextrin and maltose. When there is a tendency to looseness, I have used the preparation known as 'dextri-maltose,' for the extra carbohydrates; . . ."—*M. Ladd: Further experience with homogenized olive oil mixtures, Arch. Pediat., 33:501-512, July, 1916.*

Continued down to 1934

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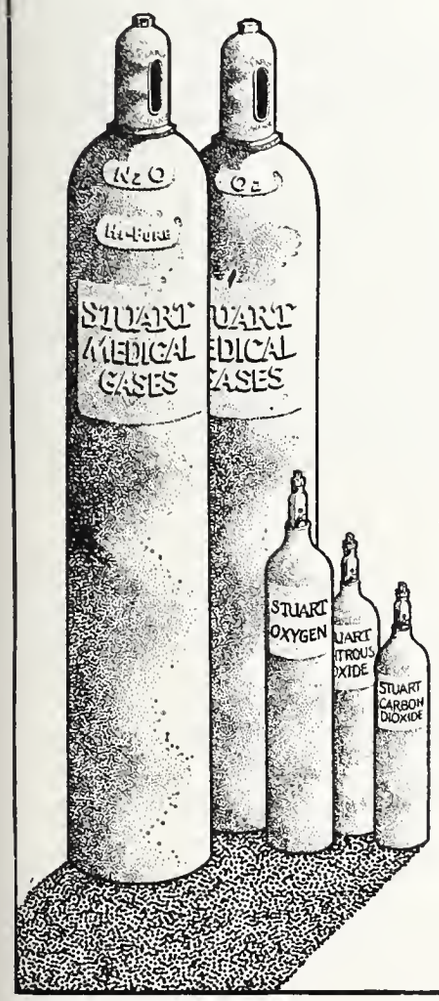

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BOARD OF MEDICAL EXAMINERS

(Continued from Page 18)

News Items

"A Coroner's Jury today recommended that Paul de Gaston, screen extra and medical student of 5600 Harold Way, Hollywood, be held for trial in the death of Mrs. Marion Irene Eilert, 23-year-old blond divorcee, who died as the result of an alleged illegal operation. . . . The medical student, who refused to testify at the inquest, has denied the charges. . . ." (Los Angeles *Evening Post,* August 15, 1934.)

"Dr. Guy E. Grosse, 'Progressive Chiropractor' here, was arrested late this afternoon on a charge of performing an illegal operation on Mrs. Lucrezia Sardi. . . . Held with Grosse, who was acquitted two years ago on a similar charge, was his nurse, Bessie Haxby, forty. Both were in the county jail, held without bail." (Santa Cruz *News,* August 16, 1934.)

"The Bureau of Internal Revenue is out to get the scalps of any physicians who handle narcotic drugs and have not registered or paid their special taxes, penalties and interest, due the Government. In a check-up by Treasury Department narcotic officers, covering one presumably typical locality, 12½ per cent of the physicians questioned had failed to register and obtain tax stamps, giving them the legal right to dispense and prescribe narcotics. Some of the practitioners admitted that they had not registered or paid a special tax for sixteen years." (*Medical Economics,* August 24, page 49.)

"Dr. Thos. O. Greig, 56, Berkeley physician, 2328 Dwight Way, was arrested early yesterday on a charge of driving while drunk. He was released on $350 bail." (San Francisco *Examiner,* August 23, 1934.)

"Dan Chandler, known as 'Gypsy Dan, the Medicine Man," must serve 90 days in jail for using profanity during one of his ballyhoo talks at his Main Street stand, according to a decision of the Appellate Department of the Superior Court, upholding a verdict given by Municipal Judge A. A. Scott." (Los Angeles *Illustrated Daily News,* August 27, 1934.) (Previous entries, July, advertising page 18.)

"The doctors of California are organizing to protect themselves in the legislature. They are entirely within their rights in acting to defend themselves against proposed legislation which they regard as detrimental to their profession, as well as the people whom they serve. Corporations, utilities, school teachers, bankers, farmers, contractors, newspaper publishers, lawyers, barbers, and the trades people in general contribute annually to a fund which permits them to have their own lobbyists at Sacramento. Why, then, should it be considered unethical or unfair

(Continued on Next Page)

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BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

for medical men, surgeons, and dentists to have a paid representative to discuss their problems with members of the legislature? Experienced senators and assemblymen are frank enough to concede that conscientious lobbyists are helpful to them in weeding out the mass of bad bills which they must consider at every session. We cannot subscribe to the belief that all lobbyists are crooks and should be lynched on sight." (Woodland *Democrat,* August 21, 1934.)

"Gene Dell'Anno, 34, Fresno 'Nature Doctor,' whose family troubles several months ago were brought to the attention of federal agents in a morals investigation, is held today for $6,000 bond on charges of being an alien in the possession of a firearm and a statutory offense. Meanwhile a further investigation of his activities as a naturopathic physician has been launched with J. W. Davidson, special agent for the State Board of Medical Examiners, arriving here. According to Police Chief Frank Truax, several operations Dell'Anno is supposed to have performed are under investigation. According to Davidson, Dell'Anno's activities have been under investigation for the past five years in California, but no evidence sufficient for prosecution has been obtained. . . . A kit of surgical instruments and a quantity of various medicines were seized at his quarters at 1725 C Street. . . ." (Fresno *Bee,* September 14, 1934.)

According to a journal published by the U. S. Naturopathic Association, Ltd., Vol. 1, No. 1, dated Los Angeles, August 4, 1934, "A Bill in Equity in Chancery in the U. S. District Court at Los Angeles, California, Case No. Equity 330-C" hopes by a federal injunction to establish "the freedom of your naturopathic profession in the future." This publication

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urges all to make application for membership and implies that an Arizona license will be issued. The files of the Board of Medical Examiners show one of these asserted Arizona naturopathic licenses which a Los Angeles individual is said to have obtained for $10 without leaving his office. Commenting on said Bill in Equity, the naturopathic journal of August 4, 1934, related: "In any event, a term of from two to four years must elapse, during which time our members are protected by the Federal Court order in practicing that which they have been taught in a legally chartered college, until their constitutional right so to do can be finally adjudicated." Thus it is they hope to obtain authority to practice by other means than by education and examination, as is required by the present law.

"A writ ordering Secretary of State Jordan to place the Chiropractic Act Amendments on the November ballot was issued yesterday by the Supreme Court. The Court held that proponents of the measure had complied with all legal requirements and could not be held responsible for an official error by which 3,727 names on a petition were not certified to Jordan. . . ." (San Francisco *Examiner,* September 6, 1934.)

At the examination held in San Francisco by the Board of Medical Examiners, July 9 to 12, 1934, one hundred and eighteen graduates of medical schools passed, and five failed. The highest mark (91 5/9 per cent) was made by James F. DeNaut of Oakland, a graduate of Northwestern University Medical School.

At the examination held by the Board of Medical Examiners in Los Angeles July 23 to 26, 1934, ninety-four graduates of medical schools took the examination, and eighty-eight passed. The highest mark (93 7/9 per cent) was made by Jerome W. Bodlander

(Continued on Next Page)

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BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

of Los Angeles, a graduate of St. Louis University School of Medicine.

The majority of those who failed in each of these examinations were graduates of foreign medical schools.

Heralded by a laudatory newspaper article printed in a Modesto paper, an individual announcing himself to be Dr. F. Victor S. MacDonald, recently announced the opening of an x-ray laboratory with equipment valued at $25,000. He had printed announcements stating he was a Fellow of the Royal College of Surgeons, Edinburgh, and a graduate of Oxford University, London, an honorary surgeon to H. M. Royal Dragoon Guards of Great Britain, and had served four years in the British Army during the World War. His assets, however, were so meager that after a three-day stay in a Modesto hotel, during which time he borrowed $1.50 from the proprietress and attempted to borrow various sums from Modesto physicians, he suddenly disappeared when the landlady requested his room rent, and has not been seen since. He is described as an elderly man, weighing over two hundred pounds, gray hair, prominent abdomen, smooth-shaven, has big teeth (which are spaced unevenly, some being closer together than others), and speaks with an English or Southern accent. Among his effects were found what purported to be a receipt for a draft drawn on the New York Trust Company, New York, for $3,500. Both the receipt and the draft were spurious. This is but one of the host of impostors traveling about the country, against which the medical profession is warned.

"Dr. George H. Parchen (chiropractor) was indicted today by the Grand Jury for murder in connection with the death on August 24 of a 21-year-old woman, assertedly as the result of an illegal operation. A warrant was issued for his arrest." (Press dispatch dated San Diego, September 8, and printed in the San Francisco *Examiner,* September 9, 1934.) (Previous entry, December, 1933, advertising page 18.)

"Dr. John Cocke, physician, must not take a drink of intoxicating liquor for five years. An order to that effect was made a condition of probation granted yesterday by Federal Judge Harry A. Holzer after Doctor Cocke pleaded guilty to one count charging him with illegally prescribing narcotics. Four other counts in the indictment were dismissed." (Los Angeles *Illustrated Daily News,* September 8, 1934.)

"Dr. Edward H. Anthony, for many years government physician here, was named in four separate indictments returned by the Grand Jury yesterday, charging him with unlawfully issuing narcotic prescriptions to addicts. William R. Dickenson, druggist, was also indicted in the same cases. Federal narcotic officials denied that the indictments constituted a 'test' case and declared that Doctor Anthony had been warned repeatedly that federal regulations prohibited the issuance of narcotics to dope addicts. Doctor Anthony contended, however, that narcotic addiction was a disease and that he was within his rights in prescribing narcotics in such cases. Two other physicians, Doctors Wade H. Walker and H. Gordon Bayless, were also indicted on narcotic prescription charges. . . ." (Los Angeles *Examiner,* August 31, 1934.)

Reports relate that Emanuel Arganoza on August 21, 1934, pleaded guilty in Fresno to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of $100 and serve ninety days in the county jail.

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The jail sentence was suspended on condition that the fine be paid and on the further condition that he no further violate the Medical Practice Act. He is said to mix religion, spiritualism, and the prescribing of dark liquid in his treatments, which seem to meet with favor among the Mexicans and Indians from the Pala Indian Reservation.

"The doors of the county jail swung open last week and out stepped Dr. John Robinson, husband of Theresa Harris, comely little actress, who had been freed on parole due to the plea of Dr. H. C. Hudson. Doctor Robinson was arrested soon after the announcement of his marriage for receiving stolen goods." (Los Angeles *New Age Dispatch,* August 31, 1934.)

"Three years' probation was granted by Federal Judge George Cosgrove today to Dr. H. H. Mahdesian of Fresno, who had pleaded guilty to two of five counts in an indictment charging violation of the Harrison Narcotic Act." (Associated Press dispatch, dated Los Angeles, September 17, and printed in the San Francisco *Examiner,* September 18, 1934.)

"'Dr.' E. Townsend Webb, arrested here on April 3 on a charge of violating the State Medical Practice Act, pleaded guilty in the Police Court this morning. Judge E. E. Breitenbucher imposed a sentence of $200 or one hundred days in the county jail and an additional term of ninety days. The latter sentence was suspended on condition that Webb stay out of San Joaquin County for at least six months. . . . J. W. Davidson, inspector for the State Medical Board, declared he had followed Webb's trail all over the State and had interviewed a number of persons who had paid large sums for his fake remedies. . . . The 'medicines' which Webb dispensed, Davidson declared, were harmless of themselves but harmful in that they prevented persons really ill from seeking proper treatment. In addition, a number of persons who were not ill were convinced that they were sick and paid for his treatments. Webb when arrested was traveling in a costly automobile and with a uniformed driver. He stopped at the best hotels and was well supplied with money." (Stockton *Record,* August 30, 1934.)

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"Twice in the last few weeks, fake doctors have been hailed before local courts for practicing without a license. In both cases the offenders had to be released with a fine less than that paid by a Chinese lottery-ticket vender. One of the offenders admitted that for many months he had been 'treating' people for

(Continued on Next Page)

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BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

cancer. The other admitted 'treating' many patients with concoctions, supposedly harmless in themselves. All realize, however that the big danger of such quacks is that they lull sick persons into a sense of false security and prevent them from seeking real medical treatment in time to be helped. Some day, we hope, practicing medicine without a license will be put in its right legal classification, something like assault with intent to commit murder. In the meantime, we think nothing is more criminal than a law which lets dangerous quack doctors off with a sentence less than that given bootleggers." (Stockton *Independent,* September 4, 1934.)

A. Tripi is mentioned in reports as having pleaded guilty in the Justice Court at Porterville, August 17, 1934, to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of $100 and serve ninety days in the county jail, jail sentence being suspended on condition that the fine be paid in four monthly installments of $25 each, beginning September 1, and on the further condition that he cease violation of the Medical Practice Act.

"A second warrant charging Dr. Thomas D. Wyatt, Redding physician, with disturbing the peace and malicious mischief, was served on him yesterday afternoon. James McLaughlin again was the complainant. He claims Doctor Wyatt, using an ice pick, smashed light globes and bottles containing selzer water at a dancing pavilion managed by McLaughlin, on Saturday night. Doctor Wyatt, arrested on a peace disturbance charge last week for similar damage allegedly done the dance hall two weeks earlier, pleaded not guilty yesterday afternoon to both complaints in the Justice Court here of R. P. Stimmel. He was given until today to furnish the $200 bail bond, and September 19 was fixed as the date of trial. . . ." (Press dispatch dated Redding, September 12, and printed in the Sacramento *Bee* September 12, 1934.) (Previous entry, February, 1934, advertising page 21.)

On complaint of a victim that her face had been badly burned, following the use of a carbolic solution, said to have been used in a so-called face-peeling operation, a warrant, according to reports, was issued in the Municipal Court of Los Angeles, charging Madame Stanley Coman with violation of Section 17 of the Medical Practice Act, bail being set at $500.

Health at the Ohio State Fair.—This year's exhibit at the State Fair by the Ohio State Department of Health will be one of unusual interest to Ohioans. It will include, besides all the statistics, graphs and charts, literature and departmental equipment which have made up the exhibit in other years, comprehensive displays, pictured and in model, of some of the newer activities which the national rehabilitation program has laid on departmental shoulders. It will be marked, also, by the active participation of Ohio club women, through the official personnel of the Ohio Federation of Women's Clubs; a very significant thing, as it is the first step in a concentrated effort by more than 450 women's organizations in Ohio to exercise their power as a health factor in support of official health work and administration in all parts of the state. Their representatives will have a booth in the Department of Health display space, with representative women constantly in attendance, and will distribute approved health literature on a number of subjects, including some of the degenerative diseases. A physician and a nurse will be present to aid in medical or other technical interpretations.

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(Continued on Page 29)

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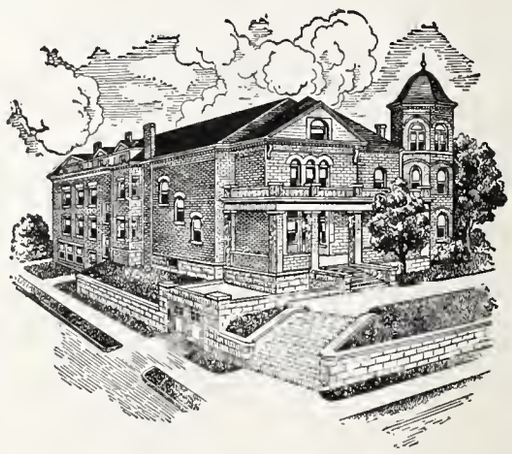

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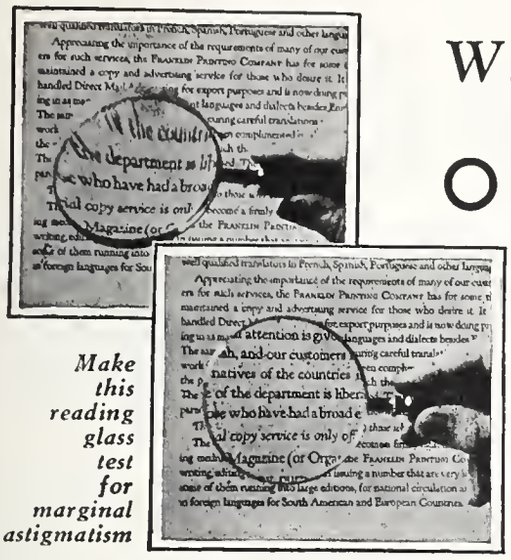

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(Continued from Page 26)

feature. It has to do with a very practical undertaking, the sealing off of waste waters from abandoned coal mines in southeastern Ohio; a problem of tremendous importance as affecting health, recreation, and scenic beauty in a large proportion of the state. There are four watercolors in the group, 22½ by 28½ inches, with suitable inscriptions; an ensemble more easily readable and understandable than a score of blueprints and hours of oral explanation. The pictures are by Major C. S. Slade, assistant sanitary engineer, whose artistic ability has been manifest in many phases of the departmental work. The mine-sealing work is under direction of Mr. B. F. Hatch, assistant sanitary engineer.

One painting shows conditions as they were in hundreds of streams before the work was undertaken, a scene of desolation, with discolored water in the stream, the banks either covered with slime or denuded of vegetation, trees dying in the vicinity; the whole typical of the waste and neglect that mark many industrial operations. Another shows one of the heavier "air-seal" operations, with a large volume of innocuous effluent; a smaller and simpler installation in the third picture, with a small outflow from the mine, and the fourth the simplest of all, the entire effluent being cut off, and with a charming little stream in one side of the landscape. They are excellent landscapes, in good tone and color, and of well-proportioned composition.

Another new feature will be a demonstration in construction of the new sanitary unit which is being erected on thousands of properties in twenty-five southern counties as part of the state-federal sanitary program, now about to be extended to the central third of the state to the north, and ultimately to all Ohio. This work will be under supervision of Dr. W. P. Johnson of the departmental staff, who is director of the state program.

(Continued on Page 31)

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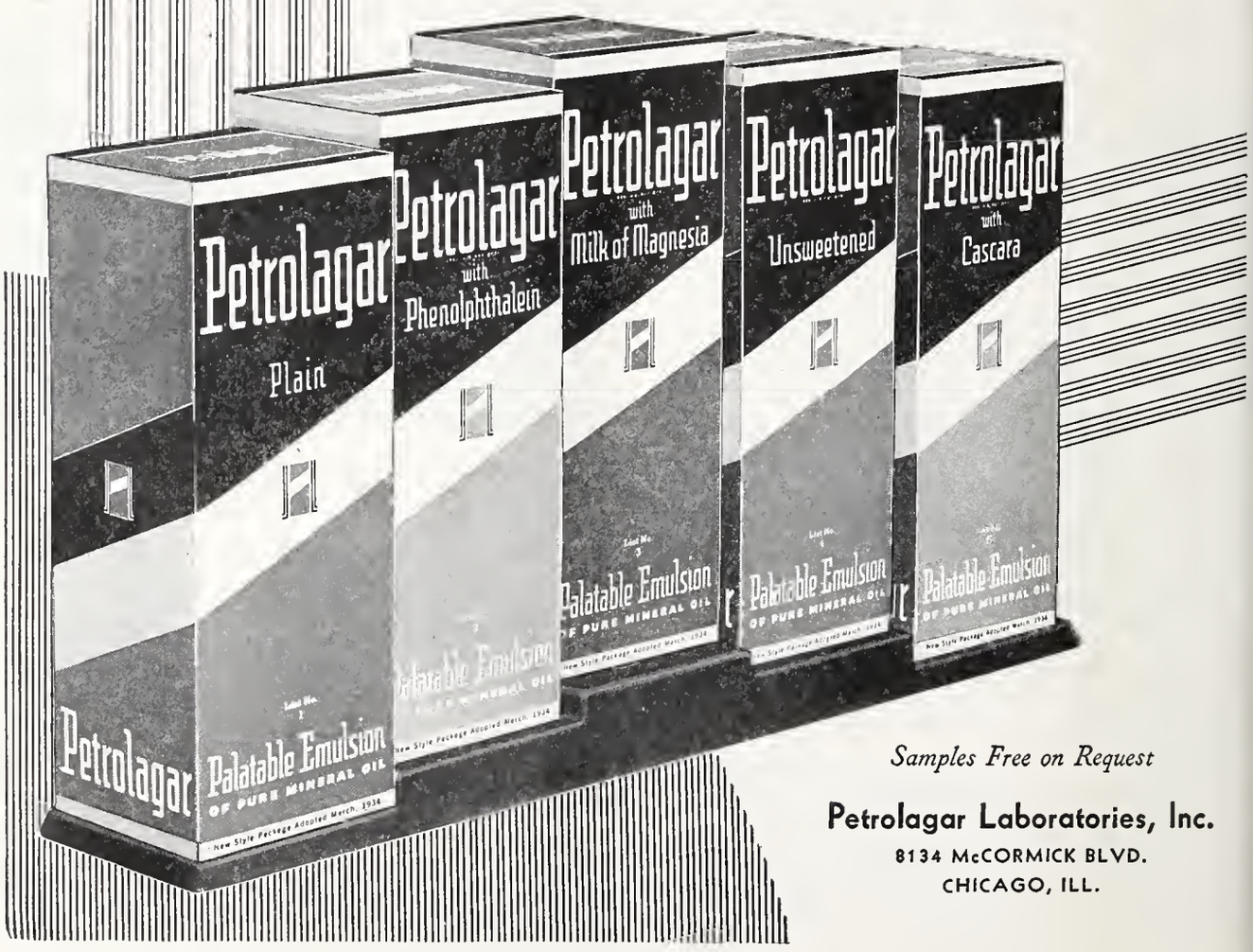

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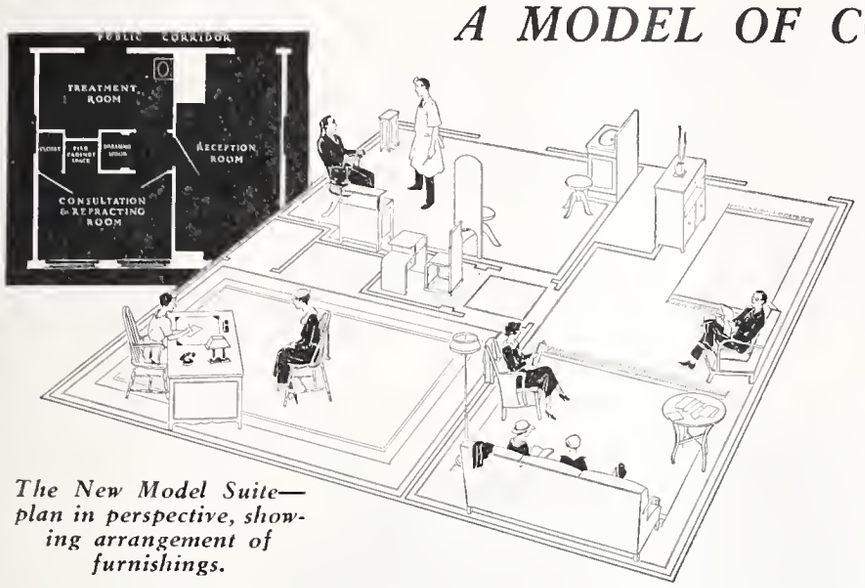

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(Continued from Page 29)

At this writing it seems likely that there will be, also, a small working model of a standard swimming pool, large enough to permit demonstration of the recirculation of water, with its attendant treatment. Final details, however, have not been worked out.

Vital statistics will feature statistics of births and deaths, brought down to date; but the presentation will be simplified in the interest of conciseness and readability. Instead of long tables of figures there will be easily read and understood presentation of salient facts; keynotes to catch the eye, hold the attention and be retained in memory, to emphasize the fact that *vital statistics is the bookkeeping system of Public Health.* There will be a new photograph of the two sets of Kemp twins, Fairfield County, at age five, and the chief of the Division is preparing an interesting feature on the recent Canadian baby-shower, lately so prominent in the news columns.

Statistical tables covering health conditions in Ohio, including movement of communicable diseases; progress of the work in child hygiene; figures, graphs and films dealing with occupational diseases; the work in tuberculosis, including photographs of and data from public sanatoria; hospital and especially maternity hospital supervision; nursing activities and available material on all the state-federal projects in which the department has a part. Laboratory equipment, with someone present to explain and illustrate its use, and figures of a few aggregates of the enormous amount of work done by the departmental laboratory, will constitute its exhibit.

The Bureau of Publicity will distribute a special State Fair edition of *Ohio Health News,* setting forth what the work of each division and bureau of the department as a whole means to Ohioans. Some departmental literature will be distributed, to meet speciad needs; but the entire scope of literature will be displayed as samples and there will be an ample supply

(Continued on Page 34)

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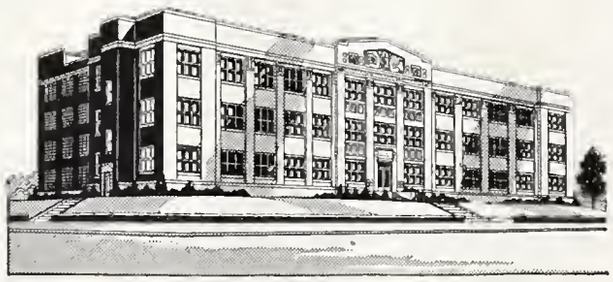

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Owned and Published Monthly by the California Medical Association
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOL. 41 OCTOBER, 1934 No. 4

CHRONIC ARTHRITIS—ITS TREATMENT*

By RUSSELL L. CECIL, M. D.
New York City

I

THE treatment of chronic arthritis has always been handicapped by lack of more definite knowledge concerning the nature of the disease. We are not only without a specific standardized therapy; we are without even an understanding of the origin and nature of this prevalent and baffling condition. In spite of these handicaps, however, the physician must treat the arthritic patient. He must treat him as well as he knows how. He must approach the disease with an open mind, not riding a hobby, and with no fixed prejudices against the therapeutic theories of others.

CLASSIFICATION OF CHRONIC ARTHRITIS

At the outset of this problem, it is necessary for me to refresh your memories concerning the classification of chronic arthritis now in general vogue. Passing over the specific forms of arthritis, we differentiate ordinary chronic arthritis into two main types: hypertrophic or osteoarthritis, and rheumatoid or infectious arthritis. Practically all authorities on arthritis are agreed on the rationale of this classification. To many students of arthritis, these two forms of the disease appear as entirely distinct and separate clinical entities.

HYPERTROPHIC OR OSTEOARTHRITIS

Hypertrophic arthritis is a disease of middle-aged and elderly people. It is characterized by thinning and fibrillation of the articular cartilage and proliferative changes in the bone, especially around the margins of the joint, where bony spurs and exostoses develop and produce a widening of the articular surface. As time goes on the cartilage wears off entirely, and the underlying bone is exposed. Presumably because of pressure, the exposed bone becomes dense and highly polished, and often functions fairly well in place of the cartilage.

It is quite possible for osteoarthritis to exist in an advanced form without producing symptoms. Autopsies on elderly patients will usually reveal more or less osteoarthritis of the knees, hips, vertebrae and phalangeal joints. Symptoms of discomfort and pain appear when a joint which is the seat of hypertrophic arthritis is subjected to acute or chronic trauma. The spurs and exostoses rub against the synovial membrane and set up inflammation. Hypertrophic arthritis, however, is not essentially an inflammatory process, but a degenerative process like arteriosclerosis or gray hair, and quite possibly results from an inadequate blood supply to the articular surface.

TREATMENT OF HYPERTROPHIC ARTHRITIS

The rational treatment of hypertrophic arthritis consists of reducing the trauma incidental to use of the joint, and increasing the local circulation. The measures most frequently employed are:

1. *Rest.*—Rest need not be absolute immobilization, but much less use of the joint than normal. This applies particularly to the weight-bearing joints, where the mere act of walking or climbing stairs often keeps up irritation in the worn-out structures.

2. *Reduction of Weight.*—Rest, of course, eliminates a certain amount of trauma, but further steps can be taken in this direction by reducing the weight of obese patients and thus again reducing the strain on weight-bearing joints. The correction of a faulty posture is another procedure which will often reduce the strain on a hypertrophic joint and thereby relieve the patient of pain and discomfort. In patients who are overweight because of a low metabolism, thyroid extract can be administered with great benefit. In those whose metabolism is normal, more dependence must be placed on a low calory diet, consisting chiefly of green vegetables and fruits. Weight reduction in these patients is often difficult because they are unable to take the normal amount of exercise.

3. *Physiotherapy.*—The various forms of physiotherapy consisting chiefly of infra-red light, diathermy and baking apparatus, are very useful in hypertrophic arthritis, particularly in those cases where only one or two joints are involved.

*Guest-speaker paper, read before the General Medical Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

Hypertrophic arthritis is particularly common in the knees and lumbar spine, and in such locations diathermy can be used with great benefit.

4. *Hydrotherapy.*—Hydrotherapy is one of the oldest forms of treatment for rheumatic disease. Baths were used in ancient Rome for the treatment of rheumatism, and some of the old Roman baths at Bath, Aix-les-Bains and other spas are still in existence. One does not have to go to a spa, however, to enjoy the benefits of hydrotherapy. A good hot tub of water with the temperature ranging from 104 to 106 degrees Fahrenheit, is an excellent substitute for the natural hot springs, and is particularly efficacious if followed by a sweat.

5. *Drug Therapy.*—The pain and discomfort of hypertrophic arthritis are best relieved by aspirin or some of the other salicylates. We have also used potassium iodid, or hydriodic acid, with considerable benefit in some of these patients.

So much, then for the treatment of hypertrophic arthritis. We can not hope by any form of therapy to eradicate the bony changes which have occurred in these joints; but we can do a great deal to relieve the patient of his pains and aches, especially if he will give wholehearted coöperation.

RHEUMATOID OR INFECTIOUS ARTHRITIS

We have said that hypertrophic arthritis is a degenerative process. Rheumatoid arthritis occurs more frequently in young people and is a truly inflammatory process. It is primarily an inflammation of the synovial membrane and other soft parts of the joint. Allison and Ghormley[1] have shown that rheumatoid arthritis has a specific micropathology. In addition to the chronic granulation tissue which occurs in the synovial membrane, and which is rather characteristic, there is a more specific lesion consisting of clumps of lymphoid cells which are not encountered in other forms of chronic arthritis. We may define rheumatoid or infectious arthritis as a chronic inflammation of the joints characterized in the early stages by pain and swelling of the joints, and in the later stages by ankylosis and deformity. The hypertrophic joint may be enlarged, but there is no heat, swelling or ankylosis. The badge of the rheumatoid joint is soft tissue swelling.

TREATMENT OF RHEUMATOID ARTHRITIS VARIES IN MEDICAL CENTERS

As I have already said, the treatment of rheumatoid arthritis suffers from lack of a specific, and of no standardized regimen such as exists, for example, in the therapy of tuberculosis or syphilis. Indeed, the character of the treatment which one receives for rheumatoid arthritis depends very largely on where he goes to get the treatment. For example, at Tucson, climate, sunlight and baths are emphasized. In some clinics, the doctrines of Rosenow are largely followed, and great stress is laid on focal infection. In some of these latter clinics, focal infection therapy is carried to an extreme. For example, every devitalized tooth is extracted, even though x-rays fail to reveal definite root abscesses. At the Mayo Clinic, Rowntree and Adson[2] are performing sympathectomy of the cervical and lumbar ganglions in selected cases of rheumatoid arthritis.

If the patient comes further east and stops at Rochester, New York, he will pretty surely be treated by hyperthermia; that is, the induction of artificial fever by diathermy. This method of therapy aims to achieve what typhoid vaccine achieves without the discomfort of a chill. However, the process of being heated up to a temperature of 105 degrees Fahrenheit, is not altogether pleasant, and I suspect that many patients would prefer the foreign protein reaction of typhoid vaccine to the artificial production of fever by hyperthermia. Furthermore, I am not yet convinced that hyperthermia by diathermy is as effective as the thermal reactions of typhoid vaccine.

If our patient travels still further east and arrives in Boston, he will encounter a distinguished group of orthopedic surgeons whose method of approach to the arthritis problem is naturally somewhat different from that of the medical men. Posture, massage and exercises are stressed, and in many cases prolonged rest in bed is insisted upon. The Boston school are particularly skillful in the handling of advanced and neglected cases of rheumatoid arthritis, where the ankyloses and deformities require expert orthopedic procedures. Synovectomies, arthroplasties and arthrodeses are resorted to when these operations are indicated.

In Toronto, Fletcher[3] and his co-workers have stressed the rôle of the large intestine in the etiology of rheumatoid and hypertrophic arthritis, and their method of treatment is based primarily on the correction of a tortuous and atonic colon. Fletcher has found that this type of colon responds well to vitamin B therapy, and therefore advises the use of vitamin B in the form of yeast, or some other such preparation, and by this treatment he claims that the colon tends to take on once more its normal shape and contour. Fletcher goes further and advises the use of the other common vitamins, A, C and D. In the experience of the writer, the use of vitamin therapy often has a very happy effect in improving the general health of the patient long before any improvement is noticeable in the joints themselves. For this reason I believe that vitamin therapy is an important factor in the treatment of rheumatoid arthritis.

In Philadelphia the physiological method of approach to the arthritis problem has been employed by Pemberton.[4] Pemberton has always been interested in the dietary treatment of arthritis, and has insisted for years that the arthritic patient does best on a low carbohydrate diet. Pemberton is also enthusiastic over the use of physiotherapy in the treatment of rheumatoid arthritis.

In New York, rheumatoid arthritis is generally looked upon as a chronic infection. This attitude has been the natural result of the bacteriological studies on the disease by Richards,[5] Burbank,[6]

Dawson, Olmstead and Boots,[7] Cecil, Nicholls and Stainsby[8] and others. These investigators all believe that rheumatoid arthritis is a streptococcal infection. R. G. Snyder,[9] who is chief of the arthritis clinic at the New York Hospital for the Ruptured and Crippled, is an ardent advocate of colonic irrigations for rheumatoid arthritis.

The spa treatment of arthritis finds expression at such resorts as Hot Springs, Arkansas, Palm Springs, California, and White Sulphur Springs or Hot Springs, Virginia. The spa treatment of rheumatoid arthritis has never been so popular in this country, however, as it is in Europe or the British Isles. In Europe the spa treatment has flourished for centuries and consists chiefly of hot water baths, carbonated baths and mud baths. At Aix-les-Bains the cure consists chiefly of hot sulphur baths. At Dax or Pistyani mud baths are given, and they are claimed to have outstanding therapeutic value.

In this connection, something should be said concerning the use of gold salts in the treatment of rheumatoid arthritis. The use of gold salts for this disease has been confined almost exclusively to France and Germany, and more recently the gold treatment has been taken up in England. Forestier[10] at Aix has been a strong advocate of the gold cure, while in England Slot and Deville[11] have claimed a high percentage of cures by the use of gold thiocyanate in oily suspension.

I have tried to show in this very rapid journey about the United States and Europe how the treatment of rheumatoid arthritis varies in different medical centers.

33 East Sixty-first Street.

(To be continued)

ACUTE INTESTINAL OBSTRUCTION*

By LeRoy Brooks, M. D.
San Francisco

Discussion *by Rea Smith, M. D., Los Angeles; George D. Brown, M. D., Pomona.*

THE high mortality rate in acute intestinal obstruction preëmpts any apology for discussing the subject. No attempt will be made to review the abundant literature, or to dwell upon the disputed question as to the origin or nature of the toxin which tends to lead rapidly to the death of the patient. All of this information has been published, and is accessible to anyone interested.

TYPES OF ACUTE INTESTINAL OBSTRUCTION

Acute obstruction must be divided into the functional or paralytic ilius and mechanical blockage. The mechanical type must further be divided into high and low obstruction, from the standpoint of the rapidity of the development of toxemia. Again, there is a difference in the clinical picture between the obturator obstruction and the strangulation type at the same level.

In the paralytic type, the great abdominal distention, apathetic facies, toxemia, rapid pulse, absence of pain with an accumulation of liquid in the stomach, failure to obtain results with enemas, lack of peristalsis, leads one to the diagnosis. In this type the cause may be any overwhelming toxemia or trauma. It occurs not infrequently in pneumonia. I have seen it in a crushing injury of the thigh, and postmortem examination proved the peritoneum to be without injury or inflammation. It most commonly occurs, however, in peritonitis, chest traumas and following formidable intra-abdominal procedures.

Without attempting to detail all the causes of acute mechanical obstruction, suffice it to say that hernia, postoperative adhesions and volvulus are the most common causes of obstruction in the small bowel, while cancer holds first place in the large intestine.

SYMPTOMS OF COMPLETE MECHANICAL OBSTRUCTION

The symptomatology of complete mechanical obstruction is so definite that the diagnosis is not difficult, unless one attempts unjustifiably to specify the exact cause, in some cases, of the obstruction.

Acute obstruction is always ushered in by paroxysmal attacks of pain, usually about the umbilicus, which come in increasing severity and at shorter intervals. If the obstruction is high, there is vomiting early; if, however, it is in the low ilium, or large intestine, vomiting may be absent until the late stages. At the onset the patient may, and often does, have a stool, because the irritation at the point of obstruction starts a wave of peristalsis in both directions. With the first enema, a small amount of gas and fecal matter may return; but upon repetition of the enemas, the return is clear and of great importance, without gas. Except in new growths and visible or palpable hernia, there is usually an operative scar on the patient's abdomen. The temperature is generally not elevated, and often is subnormal. Examination of the abdomen shows distention only if the obstruction is low in the canal and of several hours standing. There usually is no mass or localized tenderness, unless the intestines are attached to the abdominal wall, or the obstruction is caused by an inflammatory process. The urine is normal except in neglected cases, and there is a polynuclear leukocytosis in the strangulated type. The pulse rate soon increases, and the palpable apex of the systolic curve is poorly sustained. The patient presents an anxious facies, soon becomes toxic, and is thoroughly impressed that there is something radically wrong with his abdomen; and it seldom requires any persuading for him to have an operation. Oscultation will detect the typical metallic tinkle heard only in obstruction with fluid and gas in the obstructed loops of intestine. This picture applies more to acute obstruction of the strangulating type of the small intestine.

If the obstruction is in the large intestine, or of the obturator type, the pain will not be so severe, and other symptoms will be slower to develop, which will allow more time to safely arrive at the proper diagnosis.

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* Read before the General Surgery Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

TABLE 1.—*Time Factor and Results**

Name	*Age*	*Hours After First Symptoms*	*O*	*Cause*	*Died*	*Living*	*Re-ferred*	*Not Re-ferred*
1. K.	26	24	25½	Volvulus	..	1	1	..
2. B.	43	1½	3½	P. O. A.	..	1	1	..
3. G.	67	72	74	S. H.	1	..	1	..
4. D.	64	24	27	S. H.	..	1	..	1
5. F.	1½	12	72	Intussusception	..	1	1	..
6. C.	10	2	2¾	Volvulus	..	1	..	1
7. B.	46	14	16	S. H.	..	1	1	..
8. W.	39	18	18½	P. O. A.	..	1	1	..
9. W.	60	60	62	Atresia	1	..	1	..
10. S.	72	72	73	S. H.	1	..	1	..
11. S.	10 mo.	5–6	6	P. O. C.	..	1	..	1
12. R.	40	96	100	Ca. R.	..	1	1	..
13. Q.	68	72	80	Ca. R.	..	1	1	..
14. P.	38	12	12½	P. O. C.	..	1	1	..
15. P.	18	6	7	P. O. A.	..	1	..	1
16. O.	37	12	12½	P. O. C.	..	1	1	..
17. O.	4 mo.	15	18	P. O. A.	1	..	1	..
18. K.	60	72	75	S. H.	..	1	..	1
19. F.	25	6	7	P. O. A.	..	1	..	1
20. D.	40	72	74	Peritonitis	1	..	1	..
21. C.	45	2	2¼	Strangulation	..	1	..	1
22. H.	22	72-P-8-C	9	P. O. A.	..	1	1	..
23. B.	80	96	97	P. O. A.	1	..	1	..
24. M.	17	12	15	P. O. A.	..	1	1	..
25. R.	30	10	12	P. O. A.	..	1	..	1
26. R.	61	20	22	P. O. A.	..	1	..	1
27. P.	52	12	14	S. H.	..	1	1	..
28. M.	NB	14	14	Imp. Anus	1	..	1	..
29. S.	65	6	10	Volvulus	1	1	1	..
30. K.	48	12	14	S. H.	..	1	1	..
31. J.	19	8	9	P. O. C.	..	1	..	1
32. L.	57	72	80	Ca. R.	..	1	1	..
33. H.	70	72	75	S. H.	..	1	1	..
34. G.	38	15	16	P. Traumatic	..	1	1	..
35. G.	66	12	15	S. H.	..	1	1	..
36. G.	68	72	75	S. H.	1	..	1	..
37. G.	35	15	15½	P. O. C.	..	1	1	..
38. G.	45	4	6	P. O. A.	..	1	..	1
39. E.	4	15	17	P. O. A.	..	1	1	..
40. W.	4 mo.	96	100	Intussusception	..	1	1	..
41. W.	82	72	73	Ca. Colon	..	1	..	1
42. S. C.	23	8	9	Volvulus	..	1	1	..
43. S. C.	22	96	98	P. O. A.	..	1	1	..
44. S. C.	28	6	7	P. O. C.	..	1	1	..
45. S. C.	54	15	16	P. O. A.	..	1	..	1
46. S. C.	81	120	124	Ca. R.	..	1	1	..
47. F. H.	68	80	84	S. H.	1	..	1	..
48. F. H.	70	72	75	S. H.	1	..	1	..
49. B.	20	18	20	P. O. A.	1	..	1	..
50. D.	18	5	7	P. O. C. P.	..	1	..	1
51. J.	19	8	9	P. O. C. P.	1	..	..	1
52. K.	26	18	8	P. O. C.	..	1	1	..
53. R.	20	6	8	P. O. C.	..	1	..	1
54. R.	21	9	11	P. O. C.	..	1	..	1
55. S.	66	120	2	Volvulus	1	..	1	..
56. B.	44	2	2¼	P. O. A.	..	1	..	1
57. S.	34	10	11	P. O. C.	..	1	..	1
58. S.	25	8	9	P. O. A.	..	1	1	1
59. K.	50	5	6	P. O. A.	..	1	..	1
60. H.	48	24	26	S. H.	..	1	1	..
61. C.	51	8	10	S. H.	..	1	1	..
62. K.	4	6	7	P. O. C.	..	1	..	1
63. L.	30	10	11	P. O. C.	..	1	..	1

* Explanatory legends for Table 1.

P. O. A.—Postoperative adhesions (after convalescence).
P. O. C.—Obstruction during convalescence, usually in peritonitis.
S. H.—Strangulated hernia.
Ca. R.—Cancer of rectum.

POSTOPERATIVE OBSTRUCTION

There is one variety of obstruction which merits special mention, and that is the obstruction which occurs postoperatively while the patient is still convalescing in the hospital. It may develop after two or three days, but usually occurs about, or after the end of the first week. The diagnosis is made upon the history of waves of severe spasmodic pain, not to be confused with mild gas pains. Enemata are not productive.

TABLE 2.—*Acute Intestinal Obstruction Summary*

Total	63	Dead	14	22.2%
Referred	40	Dead	13	32.5%
Not referred	23	Dead	1	4.3%
Small intestine	56	Dead	12	21.3%

The correct history of how the paroxysmal pain started, and its increase in severity, is the key to the diagnosis, along with the findings listed above. In delayed cases, the intestines are often so fatigued that strong contractions are no longer possible; thus the early symptoms are important. To take the diagnosis to the family at an early stage and insist upon a second operation, requires courage. Too often delay is practiced in the hope that the condition will clear up spontaneously, and this delay is responsible for many deaths. X-rays of the abdomen will show gas and fluid levels, but they are seldom necessary if a correct history is elicited, and the giving of barium, I believe, should definitely be avoided in complete obstructions.

TREATMENT

The treatment of adynamic ilius is a very difficult problem. Enemas, heat to the abdomen by compresses or electric bakes, and adequate quantities of fluids, inorganic salts, various intravenous solutions to stimulate peristalsis, notably concentrated sodium chlorid solution, spinal anesthesia and paravertebral sympathetic block, are procedures to which we may resort sometimes with success, but often with failure. Continuous drainage of the stomach by means of a nasal tube is more efficacious in this type of case than an enterostomy.

The treatment of mechanical obstruction is early operative relief of the obstruction, or drainage of the intestine by an enterostomy in selected cases. The obstructed patient secretes large amounts of fluids into the upper intestinal tract, which may be vomited or which are not reabsorbed. This leads rapidly to dehydration, which must be combated by injection of fluids.

Because of the loss of chlorids by vomiting or by lack of absorption from the gastro-intestinal tract, there is a tendency to develop hypochloremia and alkalosis. Clinically, alkalosis can be recognized by cyanosis of the extremities, not infrequently by a wandering mind, hyperirritability of muscle nerve phenomena and tetanic contractions of the hands when a tourniquet is applied. The urine is scanty or there may be aneuria. The blood chemistry will make the diagnosis definite by the finding of low blood chlorids, high carbon dioxid combining power and increase in the nonprotein nitrogen.

It is, however, not practical to wait for the laboratory report with approaching tetany. Fluids and chlorids should be given liberally before, during and after the operation, and the blood chemistry should serve as a guide in the quantity of chlorids and glucose solutions needed. Since alkalosis is more often recognized and better understood, many patients recover who in the past expired. It is believed that the calcium of the blood in alkalosis is combined with phosphates, and free ionic calcium must be added. Brilliant results can often be obtained by giving calcium chlorid 5 per cent solution, 10 to 20 c.c. intravenously.

TABLE 3.—*Importance of the Time Factor*

Average time before operation—referred	39.3 hours			
Average time before operation—not referred	15.05 hours			
Operation under 24 hours	42	Dead	6	14.2%
Operation over 24 hours	21	Dead	8	38.09%

UNUSUAL CASES

Not infrequently one has to deal with a patient who is young and apparently in good condition. His obstruction is recognized, and he is operated upon early, but he does not do well. He fails to take up the solution from his muscles or subcutaneous tissue readily, and develops a general edema with a urine output which decreases in amount each twelve hours until he develops an aneuria before death. This picture is apt to be puzzling because it usually occurs two to four days after operation, and sodium chlorid and fluids have been given plentifully, but not in excess. Such a patient in our experience will recover only if he is "acidified." This may be done by giving 10 to 20 c.c. 5 per cent calcium chlorid intravenously, preferably in 300 to 400 c.c. 20 to 25 per cent glucose. It may be necessary to repeat this in twelve hours. The usual response is a profuse diuresis. Glucose alone will not accomplish this, as the patient must be "acidified" and he probably has a low sodium tolerance. Ringer's or Hartman's solution are preferable as a routine to normal saline, because of better balance of inorganic salts.

In shocked patients or those moribund, operation must be deferred until the patient's condition is improved by gastric drainage, fluids, chlorids, calcium and glucose. A few of the neglected cases may be saved by this procedure who could not endure an immediate operation.

Spinal anesthesia or spinal with gas and oxygen, depending on the temperament of the patient, is the anesthetic of choice since obstructed cases tolerate profound ether anesthesia very poorly.

Often one has to deal with an obstruction in a patient who is too sick to stand a laparotomy. A typical example is a patient with pelvic peritonitis who develops an obstruction. An enterostomy done in the patient's room under local anesthesia with a catheter placed well into the distended intestine will often save the patient's life, *if it is done early*. It is gratifying to find that such patients often never have to have any further operation for relief. If the obstruction is due to volvulus there might be, of course, an isolated strangulated loop of intestine which would not be drained by an enterostomy and would cause the death of the patient. In such cases, however, the severity of the symptoms, the sudden onset and the shock produced is so overwhelming that clinical experience will tell one that the hazard of a laparotomy must be accepted.

Occasionally, in a plastic type of peritonitis, there may be present a duplex obstruction; one in

the small intestine and a second in the sigmoid. In such cases it is necessary, in addition to doing an enterostomy in the small intestine, to do a cecostomy as well.

Experimental work shows that animals will die just as soon from complete loss of their upper intestinal contents as will controlled animals with complete obstruction without strangulation. This is the problem in some cases from profuse drainage from an enterostomy. Situations are sometimes such that drainage from an enterostomy can be collected by continuous suction and replaced by injection, or by the drip method in the intestine below the fistula. We have had the opportunity to practice this with success in two cases.

In obstruction of the large bowel from cancer, the primary operation should consist of a colestomy only, or exploration and colostomy.

Holden of Portland, Oregon, in advanced cases of small bowel obstruction eviscerates the patient, places a tube in the intestine and milks out the toxin with gloved fingers. This is practiced by some other surgeons and probably has its advantages; however, the same result can be accomplished and with greater ease if the operation is done under spinal anesthesia. The toxins may be milked into the large intestine and caught through a rectal tube in a basin without either opening the intestine or eviscerating the patient. The intestines are simply gently stripped without removing them from the abdominal cavity.

MORTALITY IN ACUTE OBSTRUCTION

Holden reports 177 cases with a mortality rate of 19⅓ per cent, which is the lowest mortality rate yet reported, to my knowledge, in a series of cases as large as this. To emphasize the detrimental effect of delay, he has divided his series into referred cases and cases seen originally by himself.

Referred cases	119	Deaths 31	Mortality 26%
Nonreferred cases	58	Deaths 3	Mortality 5⅛%

There is a definite direct relationship between the mortality rate and the time of delay of operation, and Holden points out that morphin is probably the biggest factor in the delay. It is well, when dealing with less coöperative patients, after the diagnosis is established, to have a definite understanding that they will be given morphin only on the condition that when the pain is relieved by the injection, they will not change their mind as to having the necessary abdominal operation.

Tables 1, 2, and 3 point out the importance of delay upon the mortality rate in this series, and supports the conclusion that complete mechanical obstruction can be diagnosed early.

490 Post Street.

DISCUSSION

Rea Smith, M. D. (1930 Wilshire Boulevard, Los Angeles).—The paper presented by Doctor Brooks is of greatest interest to me, particularly for the graphic manner in which he has stressed the time element before operation in intestinal obstruction.

The fact that he had a mortality of 22.2 per cent in sixty-three cases; that in the forty referred cases the mortality was 32.5 per cent, with an average time from the beginning of symptoms to operation of thirty-nine hours, while in the twenty-three cases seen first by himself there was only one death, a mortality of 4.3 per cent and an average of fifteen hours between the beginning of symptoms and the operation, tells the whole story in acute intestinal obstruction. "Early diagnosis and early operation," no matter of what type, is the keynote of success in handling this very serious accident.

I want to thank Doctor Brooks for a most interesting and instructive paper.

George D. Brown, M. D. (568 North Main Street, Pomona).—It has been a pleasure to read Doctor Brooks' practical paper on a condition in which our results have not been satisfactory, as far as mortality is concerned. The alterations in blood chemistry of this condition have been well established, and the measures taken to correct these alterations, as described by Doctor Brooks, have been a great help in the treatment of these cases.

I am convinced that the use of an enterostomy in all cases of more than a few hours' duration, with markedly distended proximal bowel, is a life-saving measure if used properly and in conjunction with drainage of the stomach and rectum by either irrigation and aspiration or some form of continuous suction apparatus. These drainage tubes must receive the personal attention from the physician in charge, to be sure they are functioning properly, in order to obtain any beneficial results. This method of treatment I realize is controversial.

I would like to emphasize what to me appears to be the most important factor in the treatment of acute intestinal obstruction, and that is, an early diagnosis with immediate operative intervention. In the early hours of an obstruction, any conservative method of relieving the obstruction will save the patient's life in a high percentage of cases. This is well shown by a study of the chart and summaries of this paper, and I wish to congratulate Doctor Brooks on his series of twenty-three non-referred cases with only one death. This is, I think, a tribute to his ability to recognize these cases early, and his courage in recommending early surgical intervention.

If the medical profession as a whole would develop the same keenness in the diagnosis of this condition as exhibited by Doctor Brooks, our surgical section meetings would be robbed of one of its most controversial subjects—enterostomy or no enterostomy in the treatment of obstruction. May I suggest early diagnosis as the best treatment for acute intestinal obstruction.

BURNS—THEIR TREATMENT*

By Don Weaver, M. D.
Oakland

Discussion *by C. A. Dukes, M. D., Oakland; Edmund Butler, M. D., San Francisco; John Homer Woolsey, M. D., Woodland.*

ONE of the difficult problems encountered in the field of surgery is the management of the patient who has suffered a severe and extensive burn. Except for the work of a few, the medical profession has given very little time to a scientific consideration of this subject. The use of tannic acid, as advocated by Davidson in 1925, appears to mark the beginning of an era characterized by a renewed activity and interest, and by many improvements in our methods of treatment.

MATERIAL FOR THIS STUDY

In order to correctly evaluate the benefits from a standardized method of treatment, we are pre-

* Read before the General Surgery Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

TABLE 1.—*Summary of Burn Cases in Alameda County Hospital for Period 1931-1933*

Total number		127
Total number of deaths		15
Cause of death:		
Shock, first day	6	
Toxic, second, third days	2	
Infection, second to sixth week	3	
Pneumonia (one on day of entrance)	2	
Gastric hemorrhage	1	
Causes foreign to burn	1	
		15
Age, years:		
10 and under	52	
10 to 50	60	
50 and over	15	
		127
Etiology:		
Scalds	45	
Fire	43	
Gasoline	11	
Gas explosion	5	
Chemical	5	
Stoves	5	
Explosives	2	
Other cases	11	
		127

senting a series of cases treated at the Alameda County Hospital during the years 1931 to 1933, inclusive, together with observations made from the study of these patients.

During the past year and a half, patients suffering from burns have been concentrated on one branch of the surgical service. This arrangement, we feel, is advantageous to all concerned. Records can be more accurately kept, statistical reports are more valuable, interest in the subject has been stimulated, uniform methods simplify nursing care and, lastly, it has reacted greatly to the benefit of the patient.

In this series we have excluded all burns of less than 5 per cent of the body surface, and all cases which were discharged to other hospitals. Deaths occurring from causes remote from the burn injury are also not included.

In Tables 4 and 5, we have endeavored to select typical burn cases, without unusual features. Third degree burns, requiring plastic operations and involving long periods of hospitalization, are not included. Deaths are also not included in Tables 4 and 5. Many of these patients, however, were discharged before healing was complete for treatment at out-patient clinics.

While these figures favor the treatment of burns with tannic acid, the picture is by no means complete. Only those in constant attendance can appreciate the advantages of this method of treatment over former methods.

The object of this paper is not to elaborate upon the merits of tannic acid, but to outline briefly the plan of treatment which has yielded the most satisfactory results in our hands.

TOXIC SYMPTOMS

The majority of deaths from burns occur from shock and toxemia during the first forty-eight hours. Shock resulting from severe burns resembles shock from any form of body injury. The source of the toxic condition is still unsettled. The experiments of Robertson and Boyd favor the absorption of toxins from the burned skin. Underhill, using the same experimental methods, does not substantiate the results obtained by Robertson; we believe, on the contrary, that there is very little, if any, absorption from the burned surfaces.

Firor, of Johns Hopkins, conceived the infectious theory of burns, in which he explains the entire symptomatology of burns subsequent to the period of primary shock, on the basis of infection, and recommends the use of gentian violet.

The majority of patients in our series suffer definite toxic symptoms, usually on the second or third day. After this period, however, in cases which are not infected, convalescence is smooth, uneventful and free from toxic symptoms.

We wish to avoid a discussion of shock and of the unsettled question of toxemia, and will confine ourselves to a brief mention of the blood and tissue changes which exist, and the measures taken to prevent them.

TABLE 2.—*Methods of Treatment Used*

Tannic acid	61
Ointments and oils	52
Hypertonic saline compresses and baths	12
Gentian violet	2
	127

TABLE 3.—*Comparison of Methods*

Number	Method of Treatment	Per Cent of Body Area	Number of Hospital Days
61	Tannic acid	14.5	22
66	Other methods	13.7	27

TABLE 4.—*Extensive Second Degree Burns 1931-1933*

Number	Method of Treatment	Per Cent of Body Area	Number of Hospital Days
36	Tannic acid	12.6	16
21	Other methods	10.6	18

BLOOD AND TISSUE CHANGES

Pain and restlessness are relieved with suitable doses of opiates. Body heat is restored and maintained by removing moist, soggy clothing, wrapping the patient in warm blankets, or by covering him with a warmed crib.

Hypertonic saline solution is given intravenously to relieve hypochloremia and blood concentration, which conditions are fairly constant in all cases of severe burns. This may be given by rectum or subcutaneously, unless the severity of shock might interfere with their absorption.

TABLE 5.—*Extensive Second Degree Burns 1933*

Number	Method of Treatment	Per Cent of Body Area	Number of Hospital Days
20	Tannic acid	11	11.5

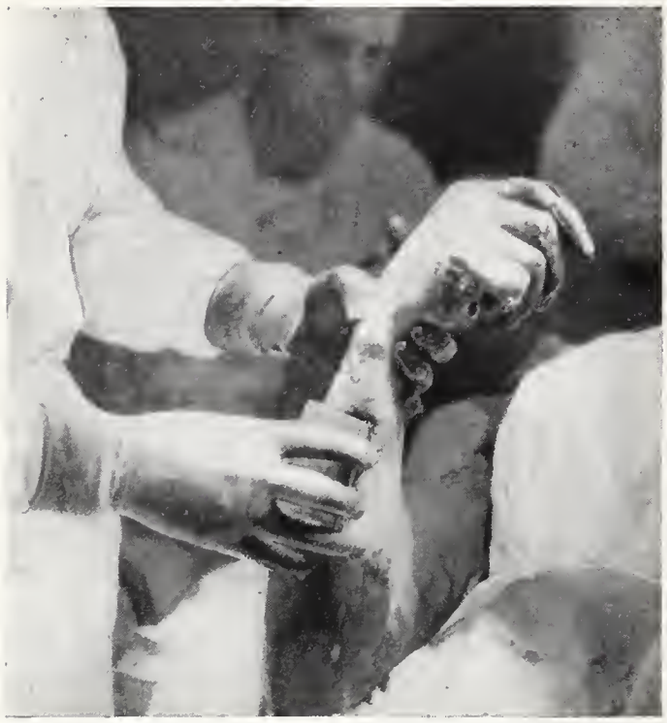

Fig. 1.—Preliminary cleansing of burned area before applying tannic acid.

Glucose in saline solution is of value immediately following the burn, in relieving shock; and after forty-eight hours to relieve the hypoglycemia, which is one of the later sequellae.

We feel that blood transfusion is of value, and that it should be used in all cases in which we fear a fatal result. Transfusion is the best means we have of combating shock, speeding up the circulation, and in relieving the capillary concentration of blood.

When considering the local treatment of the burned area, we must realize that we are dealing with an infected wound and a surgical problem. Firor demonstrated the betahemolytic, or the gamma streptococcus, in 100 per cent of severe burns within twelve hours.

The clinical picture of the infected burn case, the pain and suffering, the frequent dressings, foul discharges, septic temperature, rapid emaciation, and secondary anemia are very familiar.

TREATMENT

Since burns, therefore, are 100 per cent infected, a fact demonstrated both clinically and experimentally, it is our custom, as soon as shock is relieved, to administer a light nitrous oxid-oxygen anesthetic, and quickly but thoroughly scrub the burned area and surrounding skin with a soft brush, using tincture of green soap, followed by alcohol and ether. Ether is especially indicated as a fat solvent, where ointments have been previously applied.

Fig. 2.—V. G. Sixteen days after tanning. No infection. Perfect healing.

Large doses of morphin may be used in cases in which inhalation anesthetics are contraindicated. Ether is used with infants.

Cleansing should be accomplished as quickly as possible to avoid additional shock from exposure and prolonged anesthesia.

We have observed no ill effects from this procedure, and we feel that it is largely responsible for a lessened morbidity, especially in cases where tannic acid is to be used.

After the wound is thoroughly cleansed, a freshly prepared solution of tannic acid is applied in a manner best suited to the individual case. In most cases we apply it in the form of wet compresses. Portions of the body which are usually difficult to tan, as in burns of the hands, feet, buttocks and groin, the affected part, or the entire trunk and extremities may be immersed in tannic acid solution.

As soon as the burned area is thoroughly tanned, usually in twelve to twenty-four hours, the patient is placed under a crib, kept warm by electric bulbs, between sterile sheets, and the area thoroughly dried.

Fig. 3.—Case No. G 1351. G. D. Twenty-five days after applying tannic. No infection.

In 60 per cent of the cases, this method of treatment is ideal, the patient being comfortable and free from all disagreeable symptoms; and as the coagulum gradually separates, a process requiring two to four weeks, we find that healing is nearly complete.

INFECTION COMPLICATIONS

Unfortunately, however, in about 30 per cent of such cases, signs of infection or of deep necrosis appear. In the infected cases of our series during the past year, symptoms did not become manifest until from two to four weeks after the burn, which fact leads us to believe that in many instances the infective organism gained entrance at the margins of the coagulum, where late bleb formation often results in small exposed areas of

Fig. 4.—Baby K. Infected case 12 days after tannic was applied. Note pus oozing from surface.

raw surface. During the past year it is our custom to paint the coagulum margins daily with one per cent gentian-violet solution, with the result that only six cases have become infected out of thirty-one treated with tannic acid. These uninfected cases are free from all systemic symptoms, being afebrile until ready for discharge.

As soon as infection, or signs of deep necrosis become manifest, adequate drainage is secured immediately by removing all of the overlying coagulum, together with necrotic areas, that have begun to separate. A general anesthetic may be required.

After removal of the coagulum, treatment directed against the infection is begun at once, the method of treatment depending upon the individual case, and often varied from day to day, as the occasion demands. Constant daily observations are necessary to meet the problems which so frequently arise.

Hypertonic saline compresses, as advocated by Blair, are effective in hastening sloughing, and in preparing the wound for the earlier application of skin grafts. Dakin's solution, magnesium sulphate, mirthiolate 1/5000, 1 per cent gentian violet, 2 per cent mercurochrome, and 1 per cent carbolic in glycerin, have all been used with beneficial results. Dilute acetic acid is used upon wounds infected with the *Bacillus pyocyaneus*.

Fig. 5.—Case No. F 5680. Infected—removal of coagulum under anesthesia.

Low grade, chronic infections frequently show a marked improvement, following short daily exposures to ultra-violet rays. We have noted, however, an apparent increase in keloid growth in many of our children who were receiving ultra-violet. But our experience is too limited for any definite conclusions.

The occurrence of severe infections, in many of our earlier cases which were tanned without the preliminary cleansing, has led us to the belief that unless the wound has been thoroughly cleaned, tannic acid has very few advantages to offer.

SUMMARY

To summarize the chief factors which we feel are responsible for a lessened mortality and morbidity, and an improvement in our management of this type of case, we list:

1. The treatment of burns is a surgical problem and should be regarded as such.
2. Timely and adequate treatment of shock and toxemia.

Fig 6.—Case No. J. R. H. Serious case of infection following application of tannic acid without preliminary cleansing.

3. Recent burns should be treated as infected wounds and thoroughly cleansed before tanning.
4. Asepsis maintained during and after tanning. Seal margins of coagulum with gentian violet.
5. Immediate removal of coagulum overlying areas of infection.
6. Daily observation and individual treatment essential in successful management of a complicated burn case.

The results obtained in the past eighteen months, during which time this plan of treatment has been used exclusively, have been gratifying to all concerned, and more satisfactory than those obtained by any previous method which we have used.

400 Twenty-ninth Street.

DISCUSSION

C. A. Dukes, M. D. (426 Seventeenth Street, Oakland).—I have been acquainted with the work on burns that Doctor Weaver has been doing at the Alameda County Hospital, and approve, in general, of his treatment. He has spent considerable time in studying shock, and I believe has improved that phase of the treatment.

Those of us who have gone through the forms of treatment of burns from the time of the Carron oil and the various modifications of the applications of wax, appreciate very much the more simplified treatment by tannic acid. I am glad that the author has given considerable leeway in this tannic application to burned areas, because I believe that there are many ways of doing it, and that the manner should be individual. Again, the giving of an anesthetic in severely burned patients, and treating the wounds in a surgical manner by thoroughly scrubbing and cleansing, after that applying the tannic acid in the way best adapted to the case, is a great advance. Emphasis, however, should be placed upon the complete tanning of the burned areas.

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Edmund Butler, M. D. (490 Post Street, San Francisco).—The tannic acid treatment of burns is undoubtedly the greatest single practical advance made in the management of this most distressing condition. The mortality resulting from burns of infants has been greatly reduced. The comfort of all patients has been definitely increased. I fear that those who have been disappointed with their results, following the use of tannic acid, have depended too much on the reputation of tannic acid, and not upon daily detailed care dictated by sound aseptic surgical principles. As Doctor Weaver has stated, the best results are had when nurses and house officers have been carefully instructed as to details.

Doctor Weaver rightfully stressed the proper cleansing of the burned areas before instituting the tannic acid treatment, and particularly is this step necessary when ointments, or oily liquids have been the primary dressing.

The tanned necrotic tissue must be considered as a protective dressing. As long as the wound remains sterile, the tanned slough is an ideal dressing. Every effort must be made to keep the slough aseptic. The painting of the margins of the tanned slough with gentian violet solution, as described by the author, is most important. Some surgeons remove the tanned necrotic tissue at the end of two weeks, and graft immediately or as soon as granulations appear in third-degree burns, and this procedure seems to shorten the time in the hospitals. Others wait for necrotic tissue to separate and then graft the granulating ulcer.

Davidson, in 1926, definitely proved that it is far better to irrigate or wash with water parts exposed to acids, or to alkalis, rather than to neutralize. The process of neutralization liberates energy which causes a further destruction of tissue other than that caused by the acid or the alkali.

❦

John Homer Woolsey, M. D. (Woodland Clinic, Woodland).—Burns are always of an emergency nature, and standardization of treatment tempered by experience and study is essential if one is to avoid delay and miscarriage of proper care. Advance in medicine is, as a rule, by an intensive study; and so Doctor Weaver and his associates are to be commended upon this special group study and standardization.

Two aspects of burns have interested us at our clinic: the initial stage, that of shock, and the second, that of toxemia.

Underhill has called our attention to what occurs in the shock period with such lesions as burns—an interference with the function of the capillary endothelium, then a loss of fluid from the blood stream into the injured tissues, giving a local edema and an increased viscosity of the blood, and resulting in turn in a failing circulation and oxygen starvation of the tissues. The degree of injury is somewhat shown by the hemoglobin estimation, especially in a severe burn. The treatment is primarily fluids with regard to the salts, and must be given in proportionately large amounts, using in the severe cases the hemoglobin estimation as an index for treatment. For example, in a patient burned over 70 per cent of the body, where her hemoglobin was 125 per cent, she was in a severe degree of shock. After twenty-four hours of treatment, during which she was given ten and one-half liters of fluids, her hemoglobin reached 85 per cent, and she became mentally clear, and her general condition was good. A second patient burned over 40 per cent of his body surface, who had a hemoglobin of 115 per cent, and was in severe shock, was given in the first twenty-four hours eight and one-half liters of fluid, when his hemoglobin reached 90 per cent and his general condition became good. We are impressed with the fact that far greater amounts of fluids should be used at times, and the continuous intravenous method of introduction by cannula should be employed in such instances.

The second stage, or that of toxemia, which begins in thirty-six to forty-eight hours after a burn, has been due, we believe, to the absorption of broken-down protein material; but with the reports of Firor and the now related experience of Doctor Weaver, we shall have to direct more attention to the infection aspect. Doctor Weaver's contribution as to the creeping in of infection at the margin is excellent, and we have adopted his ideas in regard to this, but have not as yet had sufficient experience to report thereon.

❦

Doctor Weaver (Closing).—The use of the hemoglobin estimation, as suggested by Doctor Woolsey, as a control index for the administration of fluids, should assist materially in the management of this type of case. We should, however, bear in mind that occasional cases occur that do not show the rise in hemoglobin which we are led to expect.

Statements are frequently seen in the literature to the effect that burns are primarily sterile wounds. This is not true. We have recently made cultures of freshly burned surfaces, and find essentially the same bacteria present that are to be found upon the unburned skin. One patient gave us repeated cultures of B. welchi.

To cover these surfaces with oils, ointments, wax or anything which will obstruct drainage, is contrary to the teaching of good surgery. Tannic acid is, likewise, contraindicated in cases which cannot be rendered reasonably aseptic by a thorough cleansing. When infection cannot be eliminated, we should rely upon carefully chosen antiseptics and compresses to facilitate drainage.

I wish to thank Doctors Dukes, Woolsey, and Butler for the interest which they have expressed by their discussions; and also Dr. Theodore Schwarz, assistant superintendent of the Alameda County Hospital, whose interest and coöperation in the preparation of photographs and slides have made this work possible.

HYPERTENSION—THE RÔLE OF INFECTIONS THEREIN*

By John T. King, Jr.
Baltimore, Maryland

II†

HYPERTENSION OF ELDERLY INDIVIDUALS

TABLE 2 shows the same two hundred cases, divided into a younger and an older group. It seems fair to assume, from clinical experience, that hypertension of elderly individuals is due to a more or less normal, or physiologic, process. In other words, it represents one of the forms of senility. With this group we are not especially

* From the Medical Clinic, School of Medicine, The Johns Hopkins University; being part of the Stanley P. Black Memorial Lecture delivered at Pasadena, April 9, 1934.

† Part I of this paper was printed in the September issue, California and Western Medicine, page 145.

TABLE 2.—*Hypertension, Two Hundred Cases*

	Under Age 50 71 Cases No.	Per Cent		Over Age 50 129 Cases No.	Per Cent
Positive history	43	60.5	Positive history	48	37.2
T. and A.	25	35.2	T. and A.	13	10.0
Present infection	7	9.8	Present infection	15	11.6
Rheumatic fever and rheumatic heart disease	10	14.0	Rheumatic fever and rheumatic heart disease	11	8.5
Entirely normal	16	22.5	Entirely normal	56	43.4

concerned, though it furnishes an interesting basis for comparison. Evans'[5] concept that premature hypertension is essentially due to a hastening of pathologic processes that may occur normally with advancing years, would probably meet the approval of most pathologists and clinicians. We are concerned with the question whether excessive tonsil infections play any part in this hastening process. It will be seen at a glance that the incidence of such infections is substantially higher in the younger group than in the older. The incidence of normal history and examination is little

TABLE 3.—*Cancer, Two Hundred Cases*

	No.	Per Cent
Positive history	81	40.5
T. and A.	17	8.5
Present infection	15	7.5
Rheumatic fever and rheumatic heart disease	26	13.0
Entirely normal	89	44.5

more than half as common in the younger group as in the older. The incidence of rheumatic infection also is higher, but perhaps not sufficiently so to be significant.

Some 178 of the 200 cases of hypertension were instances of "essential hypertension"; of the remaining twenty-two, seventeen showed sufficient renal involvement to be considered cases of vascular nephritis, five were listed as "chronic nephritis." Of three cases coming to autopsy, two showed vascular renal lesions, while one was a case of true chronic glomerulonephritis. This last case remains in the tabulations.

TABLE 4.—*Tuberculosis, Two Hundred Cases*

	No.	Per Cent
Positive history	102	51.0
T. and A.	49	24.5
Present infection	29	14.5
Rheumatic fever and rheumatic heart disease	16	8.0
Entirely normal	53	26.5

PROBLEMS OF CONTROLS

The matter of controls was not easily solved. Here cases from the surgical service would be ideal except for reasons given above. First, analysis was made of two hundred patients with cancer. Table 3 shows that the incidence of throat infections in this group is low. It is strikingly similar to the analysis of older hypertensive patients in all departments. The chief doubt about the use of cancer patients as control cases lies in the fact that some observers have thought that cancer patients, as a rule, give a history of relative freedom from upper respiratory tract infections.‡ One consideration in the selection of cancer patients as controls was that they include for the most part individuals of middle or late life. It is possible that criteria for tonsillectomy, or the frequency of this operation, vary from time to time; hence it seems desirable to draw control cases from both late and early adult life.

For the next control group, two hundred cases of tuberculosis were selected; this group insures the inclusion of individuals of younger ages. On the other hand, throat infections are probably higher among patients with tuberculosis than in the general population; tubercle of the tonsil is

TABLE 5.—*Syphilis, Two Hundred Cases*

	No.	Per Cent
Positive history	107	53.5
T. and A.	36	18.0
Present infection	27	13.5
History of rheumatic fever and growing pains	20	10.0
Entirely normal	65	32.5

by no means rare. At any rate, the evidence of past and present tonsil infection is rather high in this group (Table 4).

Not feeling satisfied with these two groups of control cases, it was decided to study the incidence of throat infection in still another type of disease. For this purpose the histories of two hundred syphilitic patients were analyzed. This group is necessarily derived largely from patients in the lower social strata, hence from those in poor sur-

‡ Verbal communication from Dr. George Draper, New York City.

TABLE 6.—*Throat Infections in Various Conditions*

	Percentage				
	Positive History	T. and A.	Present Infection	Rheumatic Fever and Rheumatic Heart Disease	Entirely Normal
Hypertension (patients under 50)..	60.5	35.2	9.8	14.0	22.5
Syphilis	53 5	18.0	13.5	10.0	32.5
Tuberculosis	51.0	24.5	14.5	8.0	26.5
Hypertension (patients over 50).....	37.2	10.0	11.6	8.5	43.4
Cancer	40.5	8.5	7.5	13.0	44.5

roundings and of poor habits of hygiene. Care was taken to select patients from the white and black races in the same proportion as in the hypertension group. The incidence in this group (Table 5) is intermediate, between that of the young hypertension cases on the one hand, and the older hypertension cases and cancer cases on the other.

In Table 6 all these groups are tabulated, while in Table 7 the control cases (six hundred in all) are thrown together. It is clear that the incidence of tonsil infection, judged by various criteria, is higher in the group of young hypertensive patients than in any one of the control groups, and that this incidence is also substantially higher than in the large group of six hundred control cases.

In selecting cases of syphilis, cancer and tuberculosis for purposes of comparison with the group of young hypertensive patients, I have attempted to demonstrate the incidence of throat infections in a large group of individuals suffering from diseases which are probably independent of the condition of the throat. The figures thus obtained probably represent the liability of a cross section of the general populace to such infections; if patients with cancer are less liable to throat infections, this factor is, perhaps, more than balanced by the higher incidence in tuberculosis patients.

Thus, the six hundred cases may be looked upon as reasonably reliable controls of a "negative" nature. It has seemed desirable to make a further comparison—this time of the incidence of throat infections in early hypertension, with that found in conditions known to be intimately related to such infections. For this group of "positive" controls, 150 patients admitted for either rheumatic fever or mitral stenosis, or both, were selected. Table 8 shows the analysis of tonsil infections in the group of cases with rheumatic infection, while Table 9 shows the comparison between this group and the group of younger hypertensive patients. The most striking difference between the two lies in the incidence of "present infection"; it seems only fair to state that some consideration should be taken of the fact that the existence of mitral valve disease, or of rheumatic fever, naturally prejudices an examiner against normality of the tonsils. On the other hand, search for foci of infection in hypertension is frequently very careful. The final comparison of "entirely normal" cases shows a difference of 11.2 per cent in favor of the incidence of infections in rheumatic disease.

Now, if the group of younger hypertensives is compared, on the one hand, with 600 "negative" control cases, and, on the other hand, with 150 cases of rheumatic infection, it appears that the incidence of throat infections in hypertension in patients under fifty years of age is about midway between the two groups.

STANDARDS OF SYSTOLIC PRESSURE USED

It was stated earlier that a standard of 140 millimeters of mercury systolic pressure was selected as the lower limit for the diagnosis of hypertension in half the 200 cases studied, while 150 was selected for the other half. As age was not considered, these standards were probably somewhat too low. For a final study, a group was taken which consisted entirely of patients, less than fifty years of age, who had a systolic pressure of 170 millimeters or more. Table 10 shows the result of this analysis. If these figures are compared with Table 2, the first column of which is composed of patients with pressure of 140 or 150 millimeters who are also under fifty years of age, no great difference is observed. In other words, the incidence of throat infection in the patients with systolic pressure over 170 millimeters is roughly the same as that of the group for which 140 or 150 millimeters was the minimum level.

TABLE 7.—*Cases of Hypertension Under Fifty Years (Seventy-one Cases) and Six Hundred Controls (Tuberculosis, Cancer, Syphilis)*

	Percentage				
	Positive History	T. and A.	Present Infection	Rheumatic Fever and Rheumatic Heart Disease	Entirely Normal
Hypertension	60.5	35.2	9.8	14.0	22.5
Controls	48.3	17.0	11.8	10.3	34.5

TABLE 8.—*Rheumatic Fever—One Hundred and Fifty Cases*

	No.	Per Cent
Positive history	106	70.6
T. and A.	54	36.0
Present infection	59	39.3
Rheumatic fever and growing pains (history)	58	38.6
Entirely normal	17	11.3

It should be noted, however, that the incidence of "nephritis" was strikingly higher in the group which included only cases of higher pressures. Of one hundred cases analyzed in Table 10, thirty-seven had sufficient evidence to warrant a diagnosis of "vascular nephritis," while in the group with lower standards of pressure only twenty-two of two hundred (11 per cent) were so classified. Of the thirty-seven cases of "nephritis" in Table 10, twelve came to necropsy: all save one showed arteriolar disease, and were classified as "arteriosclerotic nephritis," "arteriolosclerotic nephritis," or "arteriolosclerosis." The one exception consisted of a case of a peculiar form of chronic glomerulonephritis, in which damage to the arterioles, while present, was not a striking feature.

TABLE 9.—*Rheumatic Fever (One Hundred and Fifty Cases) and Hypertension Under Age Fifty (Seventy-one Cases)*

	Percentage				
	Positive History	T. and A.	Present Infection	Rheumatic Fever and Rheumatic Heart Disease	Entirely Normal
Rheumatic fever	70.6	36.0	39.3	38.6	11.3
Hypertension (patients under age 50)	60.5	35.2	9.8	14.0	22.5

AVERAGE AGES OF THE VARIOUS GROUPS

Finally, consideration must be taken of the average ages of the various groups of cases. The average age of those individuals over fifty years with hypertension was 61.57 years, while the average age of the cancer patients was 53.58 years. It is of some interest that these two oldest groups of patients had the smallest incidence of throat infection. Several factors may have played a part. The patients may have forgotten such infections as occurred in childhood and early adult life. Tonsillectomy was probably done less commonly when these two groups of patients were young. Moreover, there is a tendency for tonsils to atrophy with advancing years. However, it is also possible that these two groups of patients have reached the upper decades of life by reason of their freedom from serious throat infections, rheumatic fever, and the complications of these conditions. In the group of tuberculosis cases, the average age was the least—31.34 years—while the incidence of throat infections was higher than in any other of the negative control groups. The age of this group may bear some relation to the relatively high incidence of throat infections. This is not the whole story, however, as Dr. S. J. Crowe tells me that three or four per cent of all tonsils removed at this hospital contain tubercle. Such an incidence of tubercle of the tonsils would raise the incidence of diseased tonsils among patients with tuberculosis substantially. It is, however, of importance that in spite of the considerations of age, and the fact that the throat is involved in certain cases of tuberculosis, it remains true that the patients with hypertension under fifty years of age still showed a somewhat higher incidence of throat infection. Perhaps the group of negative controls that was least open to suspicion was the group of syphilitic patients. The average age of these patients was 38.08 years. The average age of the seventy-one younger hypertensives shown in Table 1 was 38.74 years, while the average age of the one hundred cases of hypertensives under fifty years of age, with a systolic blood pressure of 170 or over, was 40.32 years. There is no apparent reason why the syphilitic group should not be a fair control of a negative nature.

SUMMARY

1. The incidence of infected tonsils was studied from the records of two hundred cases of hypertension.

2. These cases were divided into those of patients who were less than fifty years of age, and those who were more.

3. Comparison of the incidence of infection in the groups of younger and older patients with hypertension was made with the incidence among 600 "control" cases (200 cases of cancer, 200 of tuberculosis, 200 of syphilis).

4. Comparison was also made between the incidence of infections in younger patients with hypertension, and patients who had evidence of past or present infection with rheumatic fever.

TABLE 10.—*Hypertension—One Hundred Cases Age: Under Fifty Years—B. P. 170 (S) and Over*

	No.	Per Cent
Positive history	68	68.0
T. and A.	24	24.0
Present infection	28	28.0
History of rheumatic fever and growing pains	14	14.0
Entirely normal	21	21.0

CONCLUSIONS

1. The incidence of tonsil infection in elderly patients with hypertension is not higher than that of a cross section of the hospital population. Hence, there is no evidence that throat infections are concerned with the etiology of the hypertension of age.

2. Tonsil infections are substantially more common among younger patients with hypertension than among the elderly patients with the same condition. The younger group also shows a higher incidence than is found among six hundred cases of tuberculosis, cancer, and syphilis.

3. Tonsillitis occurs more often among younger patients with hypertension than is the case in the "negative controls."

4. The incidence of tonsil infection in premature hypertension is about midway between the incidence found in "negative controls" (tuberculosis, cancer, syphilis), and that found in the "positive controls" (cases of infection with rheumatic fever).

5. Evidence of a nature similar to the observations that have linked throat infections with rheumatic fever shows that tonsil infections are probably concerned in the etiology of certain cases of premature hypertension.

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ROENTGENOTHERAPY OF SUPERFICIAL MALIGNANCIES*

By H. J. Ullmann, M. D.
Santa Barbara

Discussion *by Louis F. X. Wilhelm, M. D., Los Angeles; L. R. Taussig, M. D., San Francisco.*

SO far as the cure alone of cancer is considered, any method that will result in its complete and permanent removal is legitimate. There are, however, in the commoner forms of superficial cancer at least, other factors to be considered—cosmetic or amount of scarring, pain and discomfort, and loss of time. Cancer pastes, or as Doctor Ewing has called them, the chemical cautery, will cure a large group of the earlier skin epitheliomata, if used extensively enough and with sufficient brutality. The pain and especially the scarring, if properly used to produce a high percentage of cures, is tremendous; so that today when a hot iron is available to any practitioner, even in the farthest backwood, the use of caustic pastes as a routine method is inexcusable.

The cautery, electric, high frequency or the ordinary soldering iron is effective, but again in all but a few selected cases results in marked scarring, except in very small superficial lesions. Adequate surgical removal of face, lip and ear lesions is subject to the same criticism, scarring and deformity.

ADVANTAGES OF RADIATION

There is no question, however, that in certain locations adequate surgical removal is the method of choice when all possible factors are considered. There is no time to discuss these factors except to note that the percentage of such lesions in the total number to be treated is very small. Radiation (the roentgen ray and radium), properly used, offers by far to the largest proportion of all superficial malignancies a method of treatment resulting in as high, or a higher percentage of cures of all cases seen than any known procedure. In addition, with the exception of very small early lesions, the scarring and deformity, pain and discomfort are infinitely less. Therefore, because with an equal or better percentage of cures in the majority of cases there is less scarring and deformity or

* Read before the Radiology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

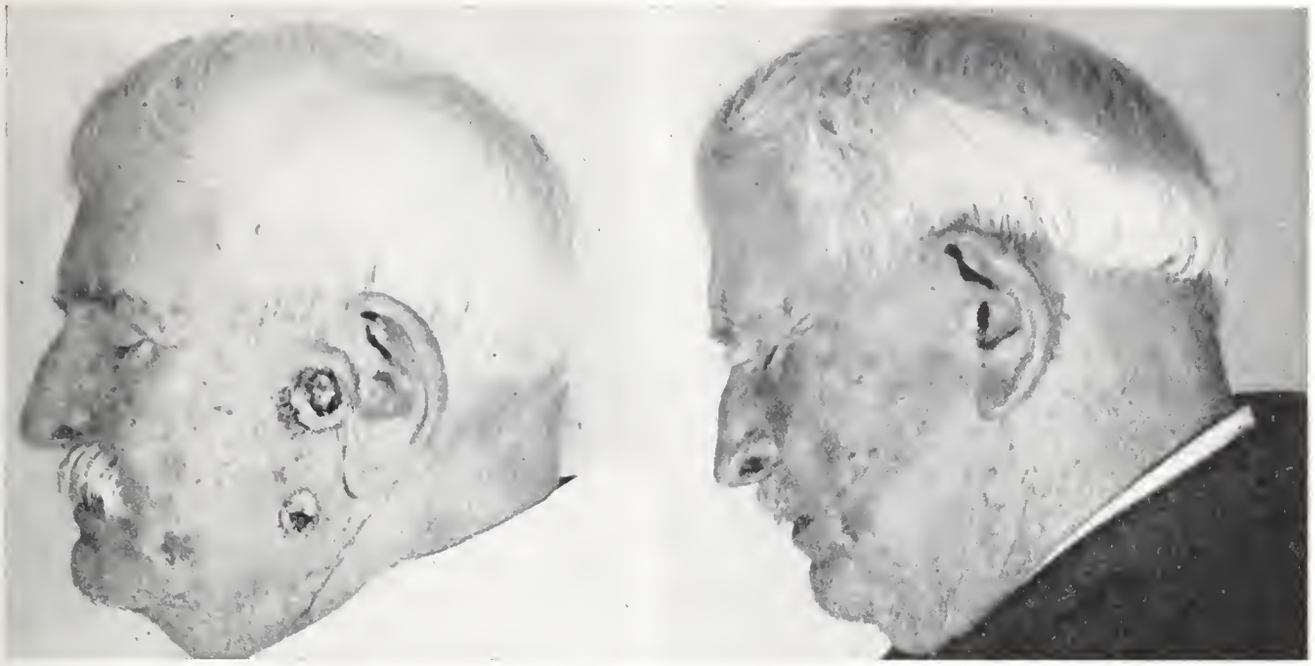

Fig. 1.—Example of curative roentgen therapy.

discomfort, I prefer to use radiation in the treatment of these lesions. I do not hesitate, however, to use excision or the cautery when, in my judgment, they are indicated. I hold no brief for the roentgen ray in preference to radium. An adequate amount of radium, skilfully used, will produce results equivalent in every respect to the roentgen ray; and there are cases where, because of the configuration of the lesion or part of the body or certain other conditions, radium becomes absolutely essential.

We must not forget that, as with all other forms of malignancy, patients will be found with their cancer so advanced that a cure cannot be hoped for. We must also not forget that these superficial malignancies may respond to palliative treatment, just as the others do, and that a few may, much to our surprise, be cured. No matter how hopeless, it is always worth while to attempt something, provided—and this is important—a method or technique is chosen for that particular case. With these no attempt at a massive, cauterizing, or curative dose must be made. No rules can be laid down, but the experienced radiation therapist will be well rewarded for his thought and effort if he is willing to accept such patients with the understanding that he will only do his best to relieve rather than cure.

RADIATION DOSAGE

It is absolutely necessary to give adequate radiation dosage, carefully controlled, to obtain results

Fig. 2.—Example of palliative roentgen therapy.

comparable to those obtained with the cautery or excision. In my early experience, I used the old standard fractional method because of a fear of permanent tissue damage. The results were not as good as by other methods, as many have found, and I turned more and more to radium. Definite difficulties were met in this procedure, especially the tying-up of a quantity of radium for an appreciable time with increased cost to the patient, and its necessary handling with resultant exposure of the operator to its radiation.

In 1926, following a visit to Doctor Martin in Dallas, Texas, I became convinced that large cauterizing doses of unfiltered roentgen rays could be given safely to areas of considerable size, and that the resultant effect on the cancer was highly satisfactory. Since then my technique has changed only toward both more intensive and higher total dosage. My present average dose of unfiltered roentgen radiation, with an effective wave length of 0.6 Å, for all surface malignancies is from 1,700 to 2,000 r for the first, followed by two more of 1,250 to 1,500 r each at forty-eight-hour intervals. This is measured in air for all areas of approximately four square centimeters or less, and on the skin or total skin dose for larger ones. I have given such treatment to areas as large as twenty square centimeters with very slight scarring. It is necessary, however, that the radiation output be carefully measured and controlled by ionization measurements. A difference of 40 per cent may be found between different equipments operating at the same meter readings, and the same machine may vary from time to time.

The opinions just expressed are based on the experience obtained in treating more than 550 skin and lip cancers from 1921 to 1934, and are those of today. I am prepared to change, or even reverse them at any time in the light of further knowledge.

SUMMARY

1. Reasons for preferring roentgenotherapy to other methods in the treatment of the majority of superficial malignancies are given.

2. Value of palliative treatment for advanced and hopeless cases, and necessity of special technique for each case are noted.

3. Principles of author's technique are given for the average type.

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DISCUSSION

Louis F. X. Wilhelm, M. D. (410 California Medical Building, Los Angeles).—We are indebted to Doctor Ullmann for the clear-cut presentation of his paper on the x-ray treatment of superficial malignancies. The pictures, showing the original condition and the result following his treatment, make it even more convincing. We must remember, however, that Doctor Ullmann has spent his life in this work, and that his results follow years of careful study and observation combined with the development of an individual technique.

In treating superficial malignancies, we have one objective—that is, the complete eradication of every cell constituting the growth. Different men use different methods and develop individual techniques. Different types of malignancies often require a variation in method, or even an entirely different method.

My own favorite way of removing superficial malignancies is based on the method of my old preceptor, the late Dr. John A. Fordyce, of New York. It consists in thorough curettage of the lesion, followed by electrodesiccation; and, in deeper lesions, the postcautery is employed. This is followed by intensive, unfiltered radiation in the same manner as that described by Doctor Ullmann.

I wish to emphasize again that, regardless of the method employed, the important thing to bear in mind is the necessity of removing every cell that is part of the malignant growth. While it is desirable to obtain the best possible cosmetic result, I believe a good rule to follow is that the more malignant the growth, the less important the scar. In other words, the degree of malignancy determines the radicalness, or the amount of destruction necessary in a given case.

As emphasized in my paper before the Section on Dermatology and Syphilology, it is most important that we diagnose correctly the lesion on the skin before treatment is instituted. Gummas, sarcoids, lupus vulgaris, granuloma annulare, and other nonmalignant lesions of the skin often require considerable diagnostic acumen to differentiate them from malignancies. Their treatment, of course, is entirely different from the treatment of a malignancy of the skin.

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L. R. Taussig, M. D. (384 Post Street, San Francisco).—A high percentage of permanent cures may be obtained in the treatment of superficial malignancies by any one of several methods: the important feature is the complete destruction of the neoplastic tissue. Radiation is one method which has proved its value, but it has certain very definite shortcomings. In the first place, the atrophic radiodermatitis that occurs following radiation therapy may be quite disfiguring, and at times even lead to the more disastrous kerotoses and even epithelioma. It is true that intensive, rather than fractional therapy, decreases the grade of the sequelae to a considerable degree. In the second place, it has been my experience, and that of a number of other dermatologists, that when cartilage is radiated intensively, healing is extremely slow. A third disadvantage of radiation is the fact that a biopsy is often not done, leaving us with no positive knowledge of the type of lesion cured. I have found that thorough curetting, followed by electrodesiccation, offers a satisfactory treatment for about 90 per cent of superficial epitheliomas. The treatment is simple, being rapidly and painlessly done under novocain anesthesia, and leaves but a moderate scar. The lesion heals in six weeks, with a hypertrophic scar which flattens out in the course of a few months. Radiation is reserved for the exceptional case.

❦

Doctor Ullmann (Closing).—I particularly asked Doctors Wilhelm and Taussig to discuss this paper because I was aware of our divergent views as well as their experience. When those who discuss a paper do not agree with the author in whole or in part, then and only then, is the full value of a discussion obtained. Of course the author or closer of the discussions has a great advantage in having the last word, and I shall, naturally, take full advantage, knowing that at some later time they will have the same opportunity. We are all agreed, I believe, that, first, the diagnosis must be correct and my paper was predicated on the assumption that the lesions treated were malignant and a biopsy was done on nearly all; second, that whatever method is used in treating the lesion, it must be expected to produce a cure. If curettage, followed by cauterization, will produce as high a percentage of cures as is obtained by this method I have described, it is in every way as satisfactory, provided (and that word carries the crux of the argument) the cosmetic results are as good or better. Of course, poor cosmetic results are permissible if necessary to cure, but with radiation poor cosmetic results

are at the minimum if the method described is followed. Doctor Taussig's fear of atrophic radiodermatitis is unwarranted with this method except in desperate cases and, if the area of dermatitis is small, it can be treated surgically. Small areas quite often heal without a scar. Ectropion following treatment of lesions of the lower lid by properly controlled radiation is most unusual. It is as unfair to compare the poor results and injuries that follow the improper use of radiation with those following skillful surgical treatment as it is to compare the deep, puckered scars, ectropions, and other deformities so often seen after unskillful surgical treatment with those obtained by properly applied irradiation. I do not see why the use of radiation should preclude biopsy, and if omitted the radiologist or dermatologist should be criticized instead of the method. It is true that cartilage heals slowly after heavy radiation, but the physician must weigh the advantage or disadvantage of each method as applied to that particular case. I have treated many ears by radiation when the cartilage was involved with excellent results, but there have also been instances where I have chosen the cautery. I want to emphasize that I do not limit myself to radiation, but choose the method which in that particular case will first cure the cancer and, second, but second only, produce the least deformity. The reason for using the time-honored method of curettage and desiccation followed by radiation, described by Doctor Wilhelm, has always puzzled me. Why, if the radiation is given to destroy the cancer left after the preliminary treatment, should it not be used in the first place? The argument that cells at the short depth involved in these lesions would not be reached unless the upper ones were removed does not apply if the proper effective wavelength and dose is used. This is well known to all radiologists. I want to remind the discussers before closing that this method is not mine alone, nor did I originate it. It is used throughout the world, and reports from many cancer centers show results such as I have described.

In closing let me again repeat that I hold no brief for any particular method, that I am not limited to radiation in treating these superficial malignancies, and that I use radiation in the majority of these cases because, first, its percentage of cures is as high as by any other and, second, that as a rule, except in very small lesions, the cosmetic results are superior.

UNDULANT FEVER*

By John C. Ruddock, M. D.
Los Angeles

Discussion *by K. F. Meyer, Ph. D., San Francisco; C. W. Bonynge, M. D., Los Angeles; J. C. Geiger, M. D., San Francisco.*

FOR centuries an obscure fever has been known to exist about the shores of the Mediterranean Sea. Hippocrates records observations leading us to believe that undulant fever existed in his time. He describes protracted fevers, lasting for many months, some with rhythmically recurring pyrexical waves that easily suggest the term "undulant." We cannot prove that the disease thus pictured is the same as the one that now engages our attention, for it was only in 1859 that Marston gave the full and minute description that makes identification possible. This keen observer, stationed at Malta, had the opportunity to study many instances of a disease prevailing on the Island, characterized by irregular relapses and remissions of fever, splenic enlargement, and a low mortality; and, by differentiating it from typhoid and other prevalent fevers there, clearly established it as a distinct entity.

Veale, in 1879, also differentiated it clearly from malarial fever. In 1886, Bruce isolated an organism from the spleen of a patient dying of the disease, which was later corroborated by Hughes in 1891, and the name micrococcus melitensis was given to it.

BRITISH COMMISSION AT MALTA

Because of the tremendous inroads made by this fever upon the personnel of the army and navy stationed at Malta, the British Government appointed a commission to study the disease. This commission made elaborate investigations from 1904 to 1907, and reported that the fever, known as Malta Fever, was due to a septicemia caused by the micrococcus melitensis, and that 10 to 15 per cent of the goats on the Island of Malta had this organism in their milk. Following this report, goat's milk for the troops on the Island was prohibited, and the cases of Malta Fever dropped from 750 cases in 1905 to none in 1907, and has practically disappeared from the British garrison since this date.

BACILLUS ABORTUS

The discovery by Bang of the bacillus abortus as a causative agent of contagious abortion in cattle was an event of equal importance in a seemingly entirely distinct field. This disease is prevalent in every part of the world where cattle are raised, and has always been a serious economic problem.

Evans, working in the Hygienic Laboratory in Washington, demonstrated the identity, or at least a very close similarity between the organism of contagious abortion and the organism of Malta Fever. They can be differentiated only by agglutination absorption tests.

However, it was not until the report of Keefer that human infection from this organism was proved. It is now well established that the abortus variety of Brucella melitensis may infect human beings and produce a disease clinically indistinguishable from undulant fever of the Mediterranean.

BRUCELLA MELITENSIS AND BRUCELLA ABORTUS

Many series of experiments have now been completed by various workers, and have proved that Brucella melitensis, the cause of Malta Fever, and Brucella abortus, which is the cause of endemic abortion of cattle and hogs, are closely related organisms.

Evans and Meyer classified this group of organisms, and have succeeded in growing many strains which have a varied pathogenicity to human beings. In order to correlate the knowledge of this disease, Meyer and Shaw proposed that the entire group be named Brucella in honor of Doctor Bruce, who isolated melitensis in 1886.

*Read before the General Medicine Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

This name has been generally adopted, and these organisms are known in the literature as Brucella melitensis and Brucella abortus.

INCIDENCE OF UNDULANT FEVER

The instance and distribution of undulant fever in continental United States is widespread, and it can hardly be doubted that it occurs in every state in the union. However, it is noteworthy:

1. That there are large areas in the country from which no cases have been reported.

2. That there is a permanent local area of goat infection in Texas, which has existed for at least forty years.

3. That the extent of infection in those states from which the disease is reported varies greatly.

4. That in heavily infected states, such as Iowa or New York, the disease is widely disseminated and occurs both in the country districts and in large cities.

5. That, although epidemics are uncommon, we notice widespread outbreaks in Iowa, New York and Michigan.

Foci connected with the goat-raising industry have been known for many years in certain parts of Arizona and New Mexico, and it is to be expected that undulant fever of caprine origin will be found wherever goat raising is a prominent industry. It is clear that in most infected states the disease is entirely independent of the goat raising industry, and we may place in the category of proven cases those occupational ones of porcine origin, which occur among slaughter house employees, and laboratory infections among bacteriologists.

From an epidemiological viewpoint, it is those cases which are now quite generally assumed to be due to cow's milk infected with the Brucella abortus type of organism which should claim our attention.

As has been stated, there are two groups of cases concerning the origin of which no doubt exists:

1. The group associated with the goat raising industry;

2. The occupational groups of porcine or laboratory origin.

It has been generally assumed that cases not of these origins are due to the transmission, through cow's milk, of the abortus type of Brucella, originally described by Bang of Copenhagen, and referred to in older literature as the Brucella abortus of Bang. Decisive proof, however, that the milk of cattle suffering from contagious abortion can transmit undulant fever to man is, in many instances, lacking. Some of these facts are as follows:

1. Contagious abortion among cattle is a disease which is widespread throughout many parts of this country.

2. Undulant fever is least common among those members of the community who drink the largest amount of milk, namely children.

3. Actual experiments of feeding healthy individuals with milk known to be infected with bovine Brucella abortus have been made with negative results.

4. It is easy to prove that an individual is infected with an organism of the Brucella group, but it is much more difficult to decide which particular member of the group is responsible.

PATHOGENICITY OF DIFFERENT TYPES

There is no question as to the pathogenicity of the caprine type. The difficulty lies in distinguishing the bovine from the porcine type. Such evidence as exists at the present time regarding the pathogenicity for man of the bovine or porcine type of Brucella abortus suggests very strongly that the porcine type is responsible even in those cases which appear to be transmitted by cow's milk. We must conclude that there has not been sufficient study of the origin of undulant fever to enable us to reach a definite decision as to the source of the infecting organism, although existing evidence points towards the porcine type rather than the bovine.

This does not eliminate cow's milk as a source of infection, for the reason that cattle, as well as man, may be infected by the porcine type of Brucella abortus. There are other factors which must certainly be taken into consideration, such as the possibility that Brucella abortus of the bovine type may, in certain localities, have taken on increased pathogenicity.

A STUDY BY THE U. S. PUBLIC HEALTH SERVICE

A detailed study by the United States Public Health Service of 484 cases reported in 1930 by Hazeltine showed that the ratio of infections according to sex was three males to one female. It was also noted that there was a comparatively low incidence in young children, which rapidly increased in adolescence and early adult life. Generally speaking, only one case occurred in a household. Three distinct epidemiological groups were noted:

1. Those having little or no contact with livestock or carcasses.

2. Those having contact with livestock, and carcasses in the meat packing industry.

3. Those having contact with livestock on the farm.

Hazeltine divides these cases into three groups:

1. The milk group, 198 cases. . . .

2. The meat group consisted of forty packing house employees, two butchers, one worker in a rendering plant, and one employee in a plant manufacturing hog cholera serum.

3. The farm group, 193 cases. . . .

DIFFERENTIATION OF VARIETIES

While it is desirable that as much light as possible be thrown upon the differentiation of varieties, it is a matter of small importance from the standpoint of the patient. The unfortunate

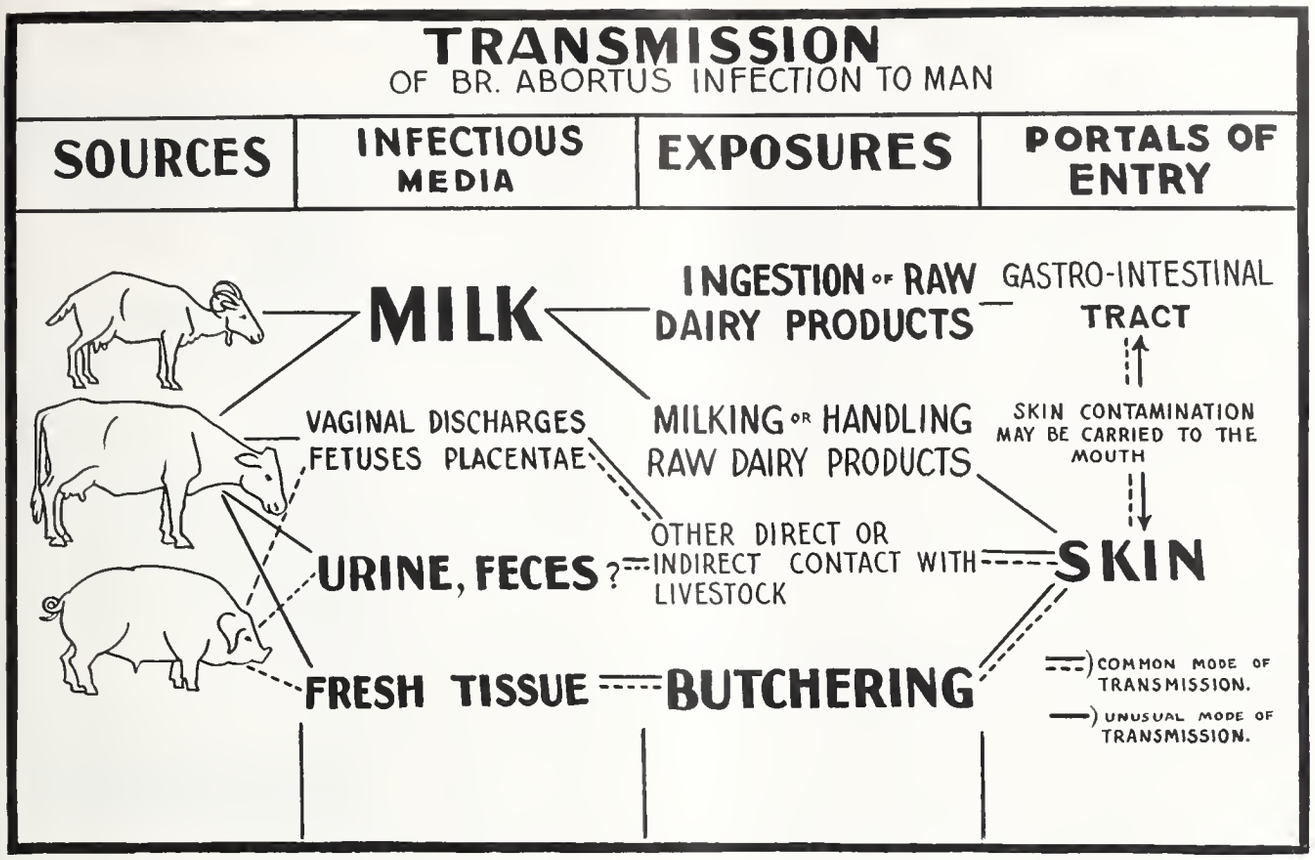

Fig. 1. Etiological factors of undulant fever (Hardy).

individual finds himself ill with a continued disabling fever, no matter what strain is associated with his case. All varieties of Brucella give an agglutination reaction against a common antigen, and when symptoms are produced, all cases appear clinically identical. For the present we should consider the Brucella genus rather than the species or variety.

All three varieties of Brucella have been isolated from cattle. Apparently the Suis, or porcine variety, is able to infect nearly all species of domestic animals, and the possibility of infection coming from unusual animal sources should not be overlooked in the epidemiological investigations.

Up to the present, transmission from one human being to another by contact appears very infrequently, if at all. The finding of Brucella in the stools of patients by Amos and Poston warns us that such transmission may be possible.

Madsen reports that in Denmark seven out of eight pregnant women aborted, and in two of these Brucella abortus was found in the placenta.

SYMPTOMS

The key which opens the door of diagnosis is suspicion. Doctors have always met with obscure fevers. We should be suspicious that any unexplained fever, especially if it assumes an undulating type, is undulant fever, even in cases of single attacks of fever of apparently brief duration.

The fever, which is the outstanding manifestation and which gives the disease its name, is remarkable. It has a peculiar, irregular curve consisting of intermittent waves, or undulations, of a distinctly remittent type, lasting from three months, the average, to two years. The undulations may be separated by apyrexical periods of varying length, so that relapses are common.

Hughes describes four types:

1. The intermittent type, with insidious onset, and mild course, with temperature rarely exceeding 100 degrees to 101 degrees. The symptoms are vague, the most prominent of which are headache, insomnia, anorexia, possibly epigastric tenderness, muscle or joint pains, and sweats. The course is consistently mild, and rarely do any more striking features present themselves.

2. The undulant type, the more common type, and in many respects, the most typical of what the name undulant fever implies. There is an undulating type of fever in which the elevations are higher, with headache, anorexia, insomnia, pains in the head, back and limbs, epigastric tenderness, and obstinate constipation. Here, also, the profuse sweats, so commonly seen, occur with greatest frequency.

3. The malignant type occurs with sudden onset, runs a stormy course and is rapidly fatal. Fortunately, this type is uncommon. Fever reaches high proportions, with rapid development of typhoid state, coma, heart failure, and death.

4. The ambulant type in which the fever is so slight as to be unaccompanied by any discomfort, and even unrecognized until sought for by examination of the blood for specific agglutinins.

The incubation period is now generally agreed to be approximately two weeks, although it has been noted that laboratory and experimental infections occur in a much shorter time, usually in from five to seven days.

The onset of undulant fever may be sudden or insidious. During this period, which varies widely,

the symptomatology is markedly variable. In some cases, clinical symptoms of an acute respiratory infection, including sinusitis, preceded the prolonged illness; and in some, cystitis or pyelitis apparently first gave concern. . . .

Unless the initial symptoms are severe, one usually discounts them until he realizes that, what at first seemed trifling, is attaining the proportions of a serious illness.

Should the infection be ambulant, or the mild type, the patient is in most instances entirely unaware of the nature of his illness, and he, or the world, is none the wiser. However, when the triad commonly present in the disease—fever, chills, and sweats—make their appearance, the infection should be suspected. . . .

PHYSICAL FINDINGS

A striking feature of the disease is the small number of objective findings. Physical examination, aside from the high fever, prostration, furred tongue, sweating, may yield nothing. However, one may find epigastric tenderness of various degrees, or enlargement of the spleen. . . .

In a laboratory examination, the blood count is probably the most characteristic finding in this disease, in that we usually discover a relative leukopenia; however, very seldom much less than three thousand white cells. . . .

The diagnosis is confirmed by agglutination reactions in the blood, which, as previously noted, are positive with a common antigen for all of the Brucella group, and cross agglutinates with the causative organism of tularemia. Blood cultures are positive at the height of the fever, and in the acute stage. The organism is also excreted in the urine of human beings, as well as in infected animals, so that urine cultures should also be made. Amos reports positive cultures from the stools of patients infected with undulant fever.

DIFFERENTIAL DIAGNOSIS

When the nature of undulant fever is not known, and when it is not considered in differential diagnosis, or when immediate complaints or local conditions only are considered, one can readily understand how many erroneous clinical impressions may be formed. When the physician, however, is armed with the facts, most of these possible diagnoses can immediately be dismissed.

The differential features of many of these mistaken impressions may be briefly discussed:

Typhoid and Paratyphoid Fever.—The rapid onset, the dull, toxic appearance of the patient, the diarrhea and tympanites, the sustained temperature, absence of sweats, usually lead to a correct opinion, while a positive Widal, or the isolation of bacillus typhosis, or paratyphosis, establishes the diagnosis.

Influenza.—This is primarily a disease associated with a respiratory infection, and I can but advocate a less universal use of the name as an accepted label for all indefinite fevers.

Tuberculosis.—Laboratory tests usually readily settle the diagnosis, although the symptoms may

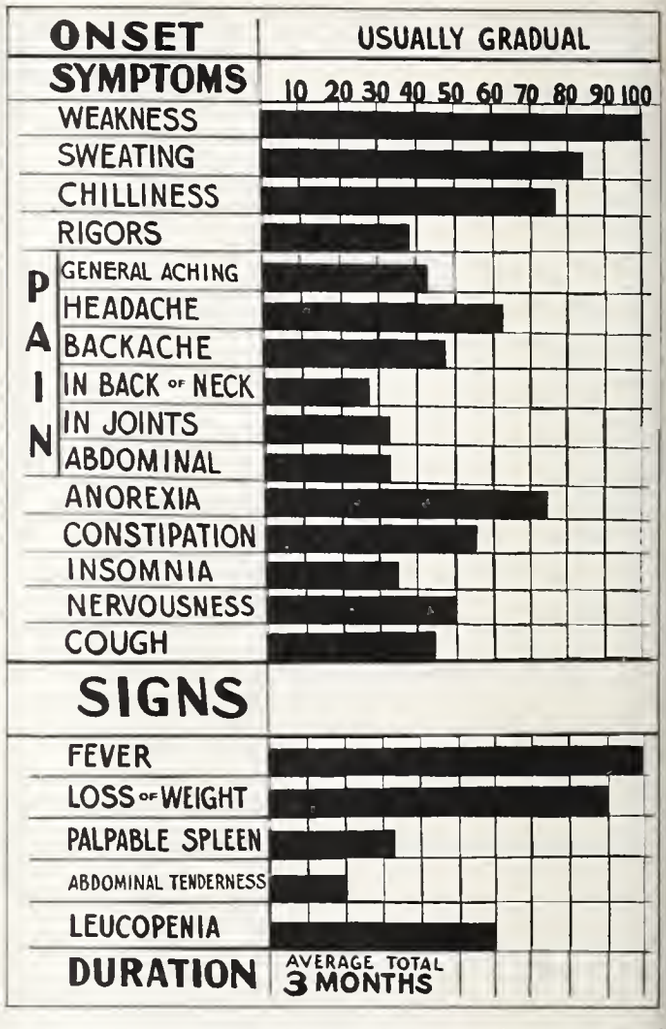

Fig. 2. Percentage incidence of signs and symptoms of 100 cases of undulant fever (Hardy).

be so analogous to the disease as to make it a real problem in the differentiation.

Malaria.—Laboratory tests, the regular, repeated rigors, and a careful history usually rule out this disease.

Pyogenic Septicemia.—Cultural study, agglutination tests, rule out such an infection; whereas the leukocytosis, with a high polymorphonuclear count, tend to differentiate this infection from undulant fever.

Subacute Bacterial Endocarditis.—Differentiation may depend wholly upon laboratory studies, blood counts, cultures, and agglutination tests.

Acute Rheumatic Fever.—The acute onset and course of rheumatic fever is in striking contrast to the insidious onset and subtle course of Brucella infections.

Tularemia.—The clinical characteristics of the usual type of this disease are so striking that the diagnosis of this infection is usually made with ease. However, in the typhoid type, which is of rare occurrence, the diagnosis is only made after agglutination tests of both Brucella and B. tularense, which are conclusive.

Appendicitis and Cholecystitis.—May occur in individuals in which undulant fever agglutinations are positive. Therefore, a careful history, with a complete physical examination, supplemented by blood counts, are necessary where these complications are suspected.

Infections of the Genito-Urinary Tract.—These may be complications of a Brucella infection, and hence an agglutination should be made for undulant fever in cases where pus is found in the urine, associated with frequency and painful micturition, as this may be one of the uncommon features of Brucella infection.

PROGNOSIS

In infections that can be attributed to the abortus variety of Brucella melitensis, it is safe to give a fair prognosis to this type of case, as there has been a case fatality of less than three per cent. However, our prognosis must be somewhat guarded when our infections are known to be of the caprine variety of Brucella melitensis, and also somewhat guarded in that type of infections that are known to be of the porcine variety. The individual is ill in varying degrees, from a few weeks to two years.

TREATMENT

There is no record of any type of known therapy which is specific for undulant fever. In the literature one finds many different specifics recommended, usually because of the uneventful recovery of a few treated cases. . . .

Because of this, it is now possible better to evaluate the different therapeutic procedures recommended. Those procedures of proven value, and of first importance, are rest, light diet, adequate fluids, and appropriate measures for the alleviation of prominent symptoms. Exercise in convalescence should be followed closely by temperature recordings, and so modified that elevations of fever above 100 degrees Fahrenheit are prevented.

There are many therapeutic measures of unproved value, and the one most commonly recommended is the use of specific vaccine. While this measure has not been used in a large number of cases, it has been observed that rapid recovery follows administration of the vaccine in cases of undulant fever, but it also has been noted that in other cases infections continued unmodified by the same treatment. . . .

ECONOMICS OF UNDULANT FEVER

Undulant fever has begun to play a very prominent part in the economics of our country. It behooves us to determine in the near future definitely the question of its etiology. Because of the close relationship between the animal diseases and the human infections, it is assumed that undulant fever is an animal-borne disease.

The economics of such a disease, which disables an individual for a period of time from a few months to two years, is far-reaching. Again we have the economics as related to industry, and the production and sale of raw milk, and the inspection and elimination from our herds of all animals giving a positive test for undulant fever. The fires of the unending war between the advocates of pasteurized and raw milk are caused to burn more brightly, because of the assumption that the disease is distributed by the use of raw milk.

1930 Wilshire Boulevard.

DISCUSSION

K. F. Meyer, Ph.D. (Hooper Foundation for Medical Research, University of California).—In order to appreciate the importance of the undulant fever problem, certain statistical data referring to the State of California may be of interest. During the period January, 1927 to January, 1934, five hundred and ninety-one cases of undulant fever have been reported. Although widely distributed throughout the State, the ten southern counties form a solid block reporting four hundred and six cases, or 68.69 per cent of the total number observed within the boundaries of the State. Los Angeles City is represented with 31 per cent of the total. The histories of these cases are by no means complete, but it is noteworthy that in 50 per cent of the established infections no other possible source than raw cow's milk is mentioned. Unfortunately, many of the clinical cases were seen late in the course of their illness, and consequently blood cultures were either not attempted or, when made, proved unsuccessful. In order to elucidate the many unknown pathways of a Brucella infection in an urban population, it is absolutely imperative that cultures be secured. Valuable information may thus be obtained as to the types of the organisms which caused the infections. With increasing frequency, the "suis" type of porcine origin has been isolated from employees of meat-packing establishments who contracted the disease in the course of their occupational duties. Equally important are the latent infections, particularly in the rural communities and among those who have contact with infected animals. The newer diagnostic methods—allergic and phagocytic index tests—materially aid in the recognition of these cases. Since the majority of undulant fever cases are diagnosed serologically, it appears imperative that the physicians appreciate that the evaluation and interpretation of these tests are by no means a simple matter. The following criteria are herewith recommended:

1. A titer of 1:80 or less, in the absence of clinical symptoms, is probably indicative of a past clinical or subclinical infection.

2. A titer of 1:100 or over, in the absence of clinical signs of disease, in all probability indicates a latent infection which may not necessarily be accompanied by disease. Such titers are not uncommon in occupational or professional groups which come in contact with Brucella organisms and contract their infections through the skin.

3. A titer of 1:100 or over, in the presence of fever or other fairly typical symptoms of the disease, may be considered as diagnostic of active infection with an organism of the Brucella group. In persons other than veterinarians, packing-house employees, farm workers or those consuming large quantities of raw milk from non-tested herds, this interpretation may hold true in the majority of instances. Exceptions, however, do occur, and blood cultures, together with the demonstration of a rise and gradual fall of titer in from three to twelve months, must then confirm the clinical diagnosis.

4. A titer of 1:20 to 1:100 in the presence of clinically diagnosed undulant fever may be interpreted as diagnostic of active infection. Patients with positive blood cultures, without having developed agglutinins above 1:80, have been observed.

5. A complete absence of agglutinins from a patient's serum, in the presence of a positive blood culture, has been observed on one or two occasions.

The diagnosis of undulant fever demands the closest coöperation between the clinician and the serologist. Until this prerequisite has been fulfilled, the statistics on this disease remain uncertain.

C. W. Bonynge, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Ruddock has presented a most complete treatise on undulant fever, and in its discussion I would only bring out a few facts regarding its epidemiology.

In spite of a vast amount of experimental study with both animals and human volunteers, it is freely admitted that little is known as to the mode of transmission of this disease. This is true both as regards its dissemination among animals and its passage from them to man.

When it became known that the organism of infectious abortion of cattle was pathogenic for man, ingestion of raw milk and its by-products was considered the greatest source of human Brucelliasis. However, those best qualified to express an opinion consider that but one out of every three infections originates from this source. While milk from infected animals is undeniably an important factor in the etiology of undulant fever, consideration of this disease from the standpoint of preventive medicine must be undertaken in a broad-minded manner.

Efficient pasteurization of milk is entirely effective *per se,* but in no way influences the continuous spread of the disease among the dairy herds and to humans in contact with them.

It is becoming more and more evident that we must look to veterinary science for the final solution of the problem, and I feel the medical profession hardly appreciates the contributions this group have made to human medicine in this and in other diseases.

Control of Bang's disease among the vast reservoir which the farm animals of our country constitute, is uppermost in the minds of all veterinarians, and its importance recognized by the Federal Government. While this measure still presents certain difficulties, its success has been demonstrated by the fact that milk may be maintained free of organisms.

I hardly need to bring to your attention that the first and soundest principle of preventive medicine is the eradication of the reservoir from which springs an infectious disease.

Public opinion is proving a powerful factor in forcing the dairyman to adopt abortion control, and I feel the medical profession should support the project by educating the layman to take an interest in the status of his milk supply, even though it be pasteurized.

J. C. Geiger, M. D. (Director of Public Health, San Francisco).—The significance of the problem of undulant fever to the clinician and to the public health worker has been stressed by many writers. Doctor Ruddock's contribution, however, is timely, and brings out in a very definite manner many of the facts that have been ascertained and which should be made available to the medical profession. There is, of course, another reason for doing this in that the practicing physician may be stimulated to scrutinize more carefully such cases as may resemble the disease, especially as to all possible sources of infection. At the very beginning it may be necessary to call attention to the statement of Evans; for in this disease, as in perhaps no other, the laboratory may offer decided help to the careful and thoughtful clinician. This statement is to the effect that there is no disease in which the physician is more dependent upon laboratory findings for correct diagnoses. The symptoms are various, indefinite and suggestive of other disease, particularly typhoid fever, malaria, tuberculosis, and rheumatism. To these diseases may now be also added focal infection, sinusitis, appendicitis, and tularemia. Moreover, some cases have been diagnosed as acute anterior poliomyelitis. In many diseases certain symptoms often can be spoken of as classical. Undulant fever has not this distinctive characteristic at this moment. The available evidence indicates that the causative organisms are of three general types, and usually classified as to hosts. The variety known as Brucella melitensis ordinarily prefers the goat; Brucella abortus (Bang) ordinarily prefers the cow; and Brucella abortus, variety porcine, ordinarily prefers the hog. Any one of these may cause undulant fever in man.

The epidemiologic evidence is far from being definite, complete or conclusive. There is no doubt that raw milk, whether it be from goat or cows, offers undisputable chances for infection, provided the herds supplying them are shedding the organism in sufficient amounts and are of sufficient virulence. Therefore, pasteurization of milk products is an essential control and preventive measure. The low index of the disease in children, and the present statistical superiority of the disease in males, especially in rural sections, has been used as a basis for assuming that many cases may be due to contact with infected animals.

The incubation period is considered around fourteen to twenty-one days, more likely near the latter. The chronicity of the illness, however, may preclude against obtaining this accurately. Raw milk from goats or cows should not be directly blamed unless laboratory data are obtained as the shedding of organisms in the milk, or the extent of the infection in the herd determined by agglutination tests or by history of recent abortions in the herd, or the recent use of live organism abortus vaccines, or by direct inoculation of guinea-pigs of centrifugalized specimens of pooled milk samples. Any assumption that infected raw milk is the causative factor should be carefully scrutinized and all other possible avenues closed. It is probable, however, that continuous ingestion of smaller numbers of abortus organisms of all types will lead to mild or unrecognized cases.

Contact infection is considered by many investigators as the most likely source of infection. By contact is meant the laboratory worker with abortus strains or infected animals; the farm worker; the goat herder; cow hand or swine attendant who might handle infected material, particularly in the abortion period; the workers in slaughterhouses; and the veterinarian. Direct contact from human to humans is unknown, and exceedingly doubtful. The investigator, however, should not be unmindful of abortion in women, particularly in rural communities. Undulant fever is reportable, but as a rule no special precautions or quarantine procedures are necessary in handling the human case. There must be appreciated, however, that the British Commission repeatedly isolated organisms from the urine of cases of true Brucella melitensis infections.

There is evidence, however, that the first two strains, Brucella melitensis, caprine strain (goats), and Brucella abortus suis, porcine strain (hogs), are more invasive than Brucella abortus bovis, bovine strain (cattle).

While it has been shown in a number of instances that invasion by the first two strains (caprine and porcine) has followed contact with infected animals, this route of infection is less common in cases due to the third strain (bovine). Furthermore, in most cases due to the presence of the bovine strain, the source of infection has probably been ingestion of infected milk, milk products, or raw infected meat or meat products.

It may be assumed, therefore, on the basis of available information at this time, that the bovine type is less invasive in that it fails to induce noteworthy symptoms. It is possible, also, that invasion by this strain may immunize against the more virulent strains of caprine or porcine types.

On the other hand, it should be remembered that cattle may be affected by the caprine and the porcine strains, as well as by the bovine strains, and that the names are applied to the strains for the reason that their usual occurrence is in the animal referred to. In other words, the porcine strain affecting the cow could, through contact, be transmitted to man because of its highly invasive characteristics; but, on the other hand, the bovine strain affecting the hog might be less invasive and therefore give rise either to no invasion or to so mild an invasion that it would not be identified as Brucelliasis.

The controversial state of the entire question, while less complex than it was a few years ago, is such that there are still many points indefinitely determined, especially to the health official.

CHRONIC CICATRIZING ENTERITIS*

By H. Glenn Bell, M. D.
San Francisco

Discussion *by J. H. Breyer, M. D., Pasadena; Rea Smith, M. D., Los Angeles; Emile F. Holman, M. D., San Francisco.*

RECENTLY we have been interested in some cases of low-grade, partial intestinal obstruction in which the pathologic process is that of an infection with scar-formation and stenosis. The lesion often resembles a neoplastic process.

Many cases have been reported under such titles as granulomata, nonspecific granuloma, benign granuloma of the intestine, phlegmon of the intestinal wall, etc., which, when analyzed, prove to have the same pathologic process. The first comprehensive article on the subject was in 1932.[1] Since that time, several other cases have been reported. Chron and his associates[1] described the specific entity, localizing the lesion, or lesions, to the terminal ileum with secondary involvement of other portions of the bowel by adhesions and the formation of fistulas. They used the term *regional ileitis*. It is our opinion, however, that the disease is not limited to the ileum, but may occur in any portion of the small bowel, and possibly in the large bowel, and we prefer the term *chronic cicatrizing enteritis,* as being more descriptive.

ETIOLOGY

The etiology is unknown. Is it the result of an infection in the mucosa which later spreads to the intestinal wall, with edema of the mesentery as a result of the lymphatic drainage of the area; is it an infection starting in the lymphatics as a lymphangitis, and extending to the wall of the bowel, or is it the result of interference with the blood supply to an area? Studies have been made for tubercle bacilli and other specific organisms, but none has been found. In experiments on interference with the blood supply of the intestinal tract, we have been unable to produce a cicatrizing enteritis, ulceration of the mucosa, or any lesion simulating the condition. Some observers have felt that a long-standing chronic appendicitis is the etiological factor, but the simple removal of the appendix has not benefited these patients. Almost every patient whose case is reported in the literature has had the appendix removed at a previous operation, at which time the true nature of the disease was not recognized.

Pupini[2] reported a case of stenosis of the small bowel which followed trauma two months before. Schloffer[3] made some extensive experiments, concluding that both direct lesions of the intestine—especially those involving the mucosa—and indirect lesions could lead to ulceration and stenosis by interruption of the circulation. There are many cases recorded of stenosis of the intestine following a severe blow to the abdomen. The pathologic process may be the result of the trauma, or of the trauma with the addition of an infection which extends into the mesentery as a result of a break in the mucosa or intestinal wall. The vascular supply to the small bowel is so adequate that it is hard to conceive that the process is one of inadequate blood supply.

PATHOLOGIC CHANGES

The pathologic process is a slowly advancing, chronic inflammation which involves the mesentery, the regional lymph nodes, the intestinal wall and the mucosa with the resulting fibrosis. In some of the case reports there has been mention of perforations of the bowel, with the formation of abcess and fistulas either between other portions of the bowel or with the abdominal wall.

Grossly the intestine shows stenosis at one point, and dilatation with marked hypertrophy of the intestinal wall proximal to the obstruction. The intestine is hyperemic and soggy. The mesentery is edematous, and the lymph nodes present a typical picture of hyperplasia. On opening the bowel, one usually finds some ulceration of the mucosa.

The microscopic picture varies in the different stages of the disease, as was shown in the cases reported previously.[4] The sections may show varying degree of acute, subacute or chronic inflammatory change, depending upon the stage of the disease when removed. Usually, however, the picture is that of a chronic inflammatory reaction, with scar-formation and round-cell infiltration, which extends throughout the entire thickness of the intestinal wall. The lymphnodes are hyperplastic and, in some, giant cells may be found; not, however, the typical picture of tuberculosis, but more that of the reaction from a foreign body.

CLINICAL PICTURE

The clinical aspect depends upon either the inflammation, the obstruction, or the combination of both factors. It is evident that the clinical symptoms will depend rather markedly upon the grade of obstruction present or the formation of an abscess. A case reported by Nagel[5] shows how suddenly the clinical picture may change: a man, twenty-eight years of age, had symptoms of colicky pain in the epigastrium, with occasional vomiting and diarrhea for seven years before sudden perforation occurred. At operation Nagel found two constricted areas in the jejunum with dilated perforated bowel between them. The pathologic process was that of an acute and a chronic inflammatory reaction, as mentioned above.

In almost all the cases, the process occurred in young people. Clute[6] reported two cases in men of forty and forty-one years respectively. They gave more or less a typical history of transient, but severe attacks of abdominal cramps, with nausea and vomiting. In one of Clute's patients, these attacks had been present for at least three years; in one of our own cases, the process probably had been going on for about twelve years; and in all the cases reported, the condition has been present from one to twelve years. There may or may not be slight anemia. There may be attacks of diarrhea and occasionally blood in the stool. These patients are usually below standard

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Read before the General Surgical Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

physically, and have vague abdominal distress, with transient attacks which are characterized by nausea and vomiting. It is evident that the attacks become more severe as the lesion becomes more obstructive, or when there is a perforation. Usually one can palpate an indefinite doughy mass in the abdomen. The disease progresses slowly, and it is likely that, in many instances, the process resolves instead of progressing, and patients get well without operation.

REPORT OF CASE

Mrs. H., aged twenty-eight years, entered the hospital in November, 1933. Her complaints were weakness, breathlessness on exertion, palpitation, pallor and epigastric pain. She knew that she had been anemic for twelve years.

Present Illness.—An appendectomy had been performed in 1927, without relief of symptoms. In 1929, the pain in the epigastrium (a gnawing sensation which came on immediately after meals) became more severe. This was relieved somewhat by the use of soda. She had been put on a Sippy régime without relief. She could feel something fill up in the lower left side of her abdomen. She complained of being weak and easily fatigued, and had a fever of low grade.

Past and Family History.—Her past history was essentially negative, except for the premature birth of an infant (at eight months) ten years before entry. Her average weight was 118 pounds; present weight 111 pounds. Her menstrual periods were very irregular and dysmenorrhea was marked. Her family history was negative.

Physical Examination.—This was essentially negative, except for a suggestion of a mass in the lower left quadrant of the abdomen. There seemed to be a distended loop of bowel that one could feel. While in the hospital, the patient developed moderate abdominal distress with nausea and vomiting after each meal.

Laboratory Examinations.—The urinalysis was negative; blood count showed: hemoglobin 33 per cent; red blood cells 3,500,000; white blood cells 11,500, with normal differential count. The stool showed blood on many occasions. The x-ray studies revealed a markedly dilated loop of ileum, and the roentgenologist made a diagnosis of a lesion of the small bowel in the lower left quadrant.

Operation.—At operation, we found a lesion in the ileum, about sixteen inches from the ileocecal valve, causing a partial intestinal obstruction with dilated and hypertrophied bowel above it. The mesentery was edematous, and the lymph-nodes were enlarged and hyperplastic. A resection and an anastomosis were done.

The pathologic examination revealed the same subacute and chronic inflammatory reaction as has been described above.

The patient is now well and is working as a telephone operator. Her blood is normal.

COMMENT

I have outlined just the essentials of this case to show what is more or less typical of cases of chronic cicatrizing enteritis: the long duration of symptoms, appendectomy performed without relief, medical treatment without alleviation of symptoms.

I am sure that there have been many cases of chronic cicatrizing enteritis which have not been reported. When one talks about the subject to any surgeon of large experience, he will remember cases from his own practice. Because of the difficulty in making a correct preoperative diagnosis, and sometimes in making a differential diagnosis between this disease and a neoplasm, the condition should be kept in mind when dealing with some of the obscure cases of abdominal complaints, particularly in young or middle aged people. While it is not always possible to make a specific diagnosis, it is possible with thorough examinations and x-ray studies to make a diagnosis of a lesion of the small bowel. Doctor Stone, at our clinic, often has found it advantageous, in looking for a lesion of the small bowel, to have a duodenal tube inserted through the pylorous so that the barium may be injected directly into the duodenum, especially for lesions high up in the small bowel.

Once the diagnosis of a lesion of the small bowel is made, operation is indicated, and the true condition will be discovered. The operation of choice is resection and anastomosis, as a simple side-tracking operation may lead to difficulty later by reason of the formation of an abscess in the excluded bowel.

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DISCUSSION

J. H. Breyer, M. D. (65 North Madison Avenue, Pasadena).—Chronic cicatrizing enteritis is a rare condition, but at the Pasadena Hospital three cases have been encountered in the last three years. The operating surgeon is apt to conclude that he is dealing with a tumor or newgrowth. A recent case of mine is similar to those of Doctor Bell. The patient had an incomplete obstruction with visible peristalsis. At operation a mass involving about six inches of the gut was found in the ileum, eight inches proximal to the cecum. At the proximal end of the involved segment was a diverticulum-like outpouching, protruding from the side of the bowel. The involved area of the ileum was resected and the end of the ileum was anastomosed to the side of the ascending colon. The patient made an uneventful recovery and has gained twenty pounds in weight in the year since the operation. Believing that the pathology was that of a newgrowth, the specimen was placed in formaldehyd solution and no bacteriological study was made.

The gross and microscopic findings of the specimen were much the same as set forth by Doctor Bell in his paper. There was an almost complete obstruction of the lumen, produced by a profound thickening of the walls, caused by marked muscular hypertrophy and scar tissue, and granulation tissue invasion of all the coats. Portions of the mucosa were ulcerated and the lumen was lined by polypoid granulations. In the region of the diverticulum, the ulcerative process had destroyed the mucosa and muscular coats, producing a thinned and weakened wall. Marked round-cell infiltration and numerous lymphoid follicles were found in all coats of the gut. Above the constriction the bowel was dilated, and the mucosa showed markedly hypertrophied folds.

We should always think of chronic cicatrizing enteritis in cases of partial obstruction, remembering also at operation that the lesions may be multiple throughout the small gut. Since the origin of this lesion is not at all understood, specimens should be studied very completely from the bacteriological standpoint.

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Rea Smith, M. D. (1930 Wilshire Medical Building, Los Angeles).—Doctor Bell has presented a very clear picture of an interesting and almost unknown surgical disease. His paper, therefore, will be of great interest to all abdominal surgeons who have met this condition and have had many kinds of diagnoses made for them in the laboratory.

I am sure that regional cicatrizing inflammation occurs in the colon as well as the small bowel. I look back on two cases occurring near the splenic flexure, treated surgically as malignant, both of which were reported chronic inflammation by the pathologists.

I have a slide of one recent case in which we made a diagnosis of localized tuberculosis of the cecum. Upon opening the abdomen the cecum, the appendix and terminal ileum were all found to be involved in the inflammatory process, and during the exploration a large abscess was opened in the mesentery of the ileum. This was drained, but no resection was done in the presence of pus.

A fistula of small bowel origin developed after some days of drainage of the abscess, which refused to close; and after several weeks we operated the second time, still believing that the process was tuberculous.

The involved ileum and right colon were removed, reversing the ordinary procedure by implanting the ileum into the transverse colon before the field was soiled. We then removed the bowel from the hepatic flexure and had an uncomplicated convalescence. The laboratory pronounced the specimen to be a chronic inflammatory process with ulceration of the mucosa, not tuberculosis.

I am sure that resection for this condition should be wide—well into the good bowel on both sides; or the process may continue in the wall concerned in the anastomosis with disastrous results.

❦

Emile E. Holman, M. D. (Stanford University Medical School, San Francisco).—The exact sequence of events in this interesting intestinal lesion is still obscure. An outstanding feature of the pathological changes is the involvement of the lymphatics as shown by edema of the mesentery, and marked hyperplasia of the lymph nodes. Is this an expression of a chronic infection originating in the bowel, or is it possibly the primary lesion, with subsequent fibrosis and secondary constriction of the intestinal canal?

Our attention was directed to this possibility in the following case:

A boy, six years of age, was admitted with a story of vomiting and abdominal pain for twenty-four hours. A palpable mass, exquisitely tender, in the right lower quadrant led to a diagnosis of an appendix abscess.

At operation a large, firm mass was found involving the terminal ileum, the cecum, and the base of the appendix. The appendix itself was very large, its walls edematous and congested. The ileum was thickened, hypertrophied and dilated proximal to the mass indicating the chronic nature of the lesion.

The presence of numerous large but soft glands in the mesentery of the terminal ileum led to a probable diagnosis of sarcoma; but a cross section of one of these glands revealed no evidence of neoplasm.

The terminal ileum and the first portion of the cecum, together with the appendix, were resected, and continuity reëstablished by an end-to-end anastomosis, according to the Parker-Kerr technique. The child left the hospital on the fourteenth day perfectly healed.

The pathological examination revealed no ulceration of the mucosa of the ileum or appendix, but a marked edema of their walls, and many lymphoid nodules imbedded in the mucosa. There was considerable dense fibrous tissue present, infiltrated with lymphocytes, plasma cells, a few polymorphonuclears and numerous eosinophils. The mucosa of the cecum was normal in appearance, in comparison with that of the ileum which was studded with lymphoid nodules.

The fibrosis was obviously greatest in the pericecal, peri-appendicular, and peri-ileal tissues, but did not infiltrate the walls; nor was there any ulceration present either macroscopically or microscopically.

This occurrence in so young a patient has hitherto not been recorded.

❦

Doctor Bell (Closing).—It is, perhaps, noteworthy that each of the discussers of this paper has seen one or more patients with conditions similar to those observed in cases of chronic cicatrizing enteritis, thereby emphasizing the fact that this condition is not so rare as has been supposed. It simply has not been recognized as an entity.

I should like to stress Doctor Breyer's comment that chronic cicatrizing enteritis should be borne in mind in cases of partial intestinal obstruction, and an effort should be made to determine the etiology.

INDUCTION OF LABOR*

USING QUININ, CASTOR OIL, RUPTURE OF MEMBRANES, AND NASAL PITUITRIN

By Olin M. Holmes, M. D.
San Mateo

Discussion *by J. Morris Slemons, M. D., Los Angeles; Clarence W. Page, M. D., Berkeley; Daniel G. Morton, M. D., San Francisco.*

THERE are no methods of induction of labor which do not have their contraindications, dangers or limitations. However, since the publication of the comprehensive reports of Schultze,[1] Guttmacher and Douglas,[2] Slemons,[3] Morton [4] and others, many of the fears of dry labor have been dispelled; and from their work there has evolved in selected cases a comparatively safe and reasonably certain means of induction of labor, namely, by the use of quinin and castor oil, in conjunction with the rupture of the membranes and the application of nasal pituitrin.

ROUTINE OF INDUCTION

The following ninety cases, which I wish to report, were induced for specific reasons, which will later be tabulated. These cases were personally supervised, and every care was taken to avoid the complications which the above authors, in their series of experimental cases, have warned against, namely, no engagement of the presenting part, pelvic dystocia, and an elongated, firm cervix.

The routine of induction was as follows:

3:00 a.m.—Castor oil, one ounce.
4:00 a.m.—Quinin, grains 10.
5:00 a.m.—Copious hot SS enema—approximately 115 degrees Fahrenheit.
6:00 a.m.—Copious hot SS enema—approximately 115 degrees Fahrenheit.
10:00 a.m.—Rupture of membranes.
2:00 p.m.—Nasal pituitrin every fifteen minutes, if necessary, or earlier if indicated.

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* Read before the San Francisco Bay Counties Obstetrical and Gynecological Society, March 9, 1934.

Several patients went into labor spontaneously with the above medication before rupture of the membranes, but these are not reported. The uterus was gently massaged routinely by an attendant at frequent intervals, following the rupture of the membranes; and, if labor did not set in before the expiration of four hours, nasal pituitrin, after the method of Hofbauer,[5] was used. No difficulty was encountered in rupturing the membranes. Anesthesia was not found necessary; no case, however, was used whose presenting part was engaged, or whose cervical canal was more than approximately one centimeter in length and did not easily admit the examining finger, even though Slemons[3] found that the length of the cervical canal was irrelevant to a successful result. The above method was first used on only toxic cases in which there was a bona fide indication for inducing labor. Later, we used it successfully on selected patients who lived a considerable distance from the hospital, and in multiparas in whom there was history of a previous short labor. Of the ninety cases there were thirty-three primiparas and fifty-seven multiparas.

INDICATIONS

Primiparas (thirty-three cases)

15 Hypertension and albuminuria (one-twin pregnancy)
1 Secondary anemia of pregnancy
4 Pyelocystitis
1 Starvation acidosis from vomiting (in hospital one week)
1 Marginal placenta previa
1 Uterine fibroid
10 Normal

Multiparas (fifty-seven cases)

11 Hypertension and albuminuria
1 Osteo-arthritis
2 Pyelocystitis
43 Normal cases (one-twin pregnancy)

RESULTS

In seventy-nine cases, or 87.6 per cent, labor was spontaneous within four hours after rupture of the membranes. In eleven cases, nasal pituitrin was used after the four-hour period, with one failure. One patient of the series failed to go into labor: she was an Italian woman at the age of thirty-two, multipara, with a previous history of hypertension and albuminuria, spontaneous labor four weeks premature, with delivery of a four-pound baby. The patient was first seen the evening previous to attempting induction; an estimated pregnancy at term, blood pressure 160/105, albumin 1.5 grams per liter, the head was engaged. She was given routine treatment, except that nasal pituitrin was used immediately after rupturing the membranes—a total of six applications at fifteen-minute intervals being used; when the uterus remained flacid. Six hours after rupturing the membranes, a No. 5 Voorhees bag was inserted, and after three and one-half hours the patient was delivered spontaneously of a normal seven-pound one ounce baby.

A second multipara at the age of thirty-six at term, who was induced because of severe discomfort from chronic osteo-arthritis of the lumbosacral region, went into labor after a latent period of three and one-half hours, was bagged because of poor uterine contractions after six hours. She was delivered after 12.6 hours labor by mid-forceps of a normal eight-pound two-ounce baby.

LATENT PERIOD

There was considerable variation in the latent period. The estimated length of labor, the amount of amniotic fluid released, and the size of the infant, or the length and consistency of the cervix made no difference so far as I could ascertain. In the multiparas an average of .88 hour latent period was found—the longest being four and one-half hours. Eleven patients experienced good contractions immediately after rupture of the membranes.

In the primiparas, the average latent period was 2.08 hours—the longest five hours. Four patients went into labor immediately after rupture of the membranes. No appreciable difference was found in the latent period between the normal and the toxic cases in either primiparas or multiparas. Of the eleven cases who were given nasal pituitrin, two were primiparas with toxemia, one four weeks premature and the other two weeks premature, one primipara with marginal placenta previa, five multiparas with toxemia at term, and three normal multiparas at term.

DELIVERY

Labor was found to be considerably shortened. In the primiparas the average length was 7.67 hours; the longest being twenty-four hours in a persistent R. O. P., the patient having had a transverse arrest necessitating mid-forceps delivery. The shortest was 2.4 hours, a normal delivery. Twenty-eight cases, or 85 per cent, delivered in ten hours or less, only one patient being in labor over 12.5 hours. In the multiparas, the average length of labor was 3.37 hours; the longest being 12.6, the shortest .85 hours, 93 per cent delivered within six hours, 76 per cent in four hours or less.

SUMMARY OF DELIVERIES

A summary of the deliveries was as follows:

Primiparas (thirty-three cases)

1 Twin: first, L. O. A.; second, breech extraction
16 Normal, anterior positions
12 Low forceps
  8 palliative
  1 because of slow fetal heart
4 Mid-forceps
  3 posterior positions
  1 L. O. A.

Multiparas (fifty-seven cases)

1 Twin: first, frank breech; second, L. O. A.
52 Normal, anterior position
3 Mid-forceps; one L. O. P.; rotated normally
1 Mid-forceps, following bag

MATERNAL MORTALITY AND MORBIDITY

Maternal Mortality.—None.

Maternal Morbidity.—Temperature determined by a reaction of 100 degrees Fahrenheit or over, lasting more than one day. In the primiparas, four cases, or 12 per cent, showed morbidity. One had a mild upper respiratory infection; two had recurrence of previous urinary infections; the fourth, a patient with a normal delivery, ran a temperature of 100.8 on the second day postpartum, and 100.2 on the third day; technically, only one case of the thirty-three showed morbidity, presumably due to uterine infection. In the multiparas, the morbidity was 10 per cent plus, or six of the fifty-seven cases. The multipara with osteo-arthritis, who was bagged, developed a phlebitis of the right leg, ran a characteristic septic fever; the multipara with hypertension and albuminuria, who was bagged, ran a temperature of 101 on the fourth day, and 100.8 on the fifth day, and then remained normal throughout the remainder of the period of hospitalization. Three cases had acute upper respiratory infections and one had a recurrence of a pyelocystitis.

FETAL MORTALITY

Primipara and multipara: one baby succumbed, a mortality of 1.1 per cent. The mother, a normal multipara at the age of thirty-three, had a previous precipitate labor. The present pregnancy was at term. Labor set in immediately after rupture of the membranes, labor normal L. O. A. 2.3 hours' duration. A small amount of gas and oxygen was used during the second stage of labor. The infant, five pounds twelve and a half ounces at time of delivery, was normal in every respect, cried spontaneously, color was good. It began having cyanotic spells six hours postpartum, and died twenty-seven hours after delivery. Autopsy revealed pulmonary atelectasis and a congenital heart lesion.

FETAL MORBIDITY

One normal, six-pound fifteen-ounce infant, who was delivered normally from a multiparous mother at term, after an easy 3.35 hours' labor, developed a bronchial pneumonia on the fifth day after delivery. However, the baby made an uneventful recovery, and was discharged with its mother on the fourteenth day postpartum. Dr. William Palmer Lucas, who saw this infant in consultation, felt that the condition noted was probably the result of an intra-uterine infection. The mother had no clinical manifestation of infection.

COMMENT

Several of the cases are of unusual interest. One, a primipara, age twenty-nine, four weeks premature, had a previous history of scarlet fever and streptococcic sore throat. She first began showing signs of kidney strain at seven months. Supportive treatment was instituted at home with bed rest, diet, etc. At eight calendar months, the blood pressure had gradually increased from 140/90 to 160/100. The urinary albumin was 1.0 gram by Eschbach determination, her cervical canal was found to be approximately one centimeter in length. After consultation the patient was transferred to the hospital and induction attempted. The latent period was 4.1 hours. One application of nasal pituitrin was used, followed by an easy labor of six hours. The infant of four pounds two and a half ounces presented no difficulties more than any premature, and was discharged from the hospital at the end of three and a half weeks, at six pounds.

Frequent blood pressure readings were taken during labor on the seven toxic cases, who received nasal pituitrin. In no case was there an increase over six to ten points in either the systolic or diastolic reading. Another primipara, two weeks premature, normal in every respect, except a marginal placenta previa, had been confined in the hospital with absolute bed rest for two weeks, because of a small amount of bleeding. In this case, nasal pituitrin was used immediately after rupturing the membranes. The latent period was 3.0 hours, and after eight hours of labor the fetal head had descended so that the baby could be delivered safely by a low mid-forceps. There was no excessive bleeding. However, I might add that surgery was prepared in case operative delivery should be deemed advisable.

The multiparous patient with osteo-arthritis, who was bagged after six hours of labor because of poor uterine contractions, gave a previous history of a high-forceps delivery on account of uterine atony. Morton's [4] failure was of this type. Hereafter, I shall hesitate in inducing labor in any patient with a history of an atonic uterus.

The infants presented no more difficulties than those of normal cases. One infant had a cephalehematoma, resulting from a transverse arrest, and mid-forceps delivery. Two infants, who were delivered by mid-forceps, were given intermuscular blood and frequent inhalations of 10 per cent carbon dioxid and oxygen, as is our practice in any abnormal delivery.

No procedure in the practice of obstetrics should ever be used for the obstetrician's convenience. Induction of labor is no exception. This method of inducing labor has its limitations and contraindications; however, it is one that, if used conservatively, I sincerely believe may be employed safely, not only in toxic cases, but also in the prospective mother who presents problems other than those of toxemia of pregnancy.

Mills Memorial Hospital.

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3. Slemons, J. Morris: Am. J. Obst. and Gynec., 23:494, 1932.

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5. Hofbauer: J. A. M. A., 89:24, 1927.

DISCUSSION

J. Morris Slemons, M. D. (819 Pacific Mutual Building, Los Angeles).—The induction of labor, by means of medicinal agents supplemented with the rupture of the membranes, has proved to be a satisfactory method

in my own experience, which began in 1927. As Doctor Holmes points out, the cases in which the procedure will be employed should be carefully chosen, and their wise selection predicates a sound knowledge of obstetrics. Upon this fundamental requirement will chiefly depend the attainment of successful results.

Those who use the method frequently are anxious to eliminate everything that is unessential and so make the procedure as simple as possible. Their experience has already taught that the technique may be reduced to the following steps, namely, the initial administration of castor oil, the rupture of the membranes two to three hours later, and the subsequent application of pituitary extract to the nasal mucous membrane in accord with the response of the individual patient. There is no need for an enema, for massage of the uterus, for stripping the membranes, or for securing a free drainage of the amniotic fluid.

Failures are encountered occasionally, if the test of success is taken to be the delivery of the patient within twenty-four hours. The cause of failure, no doubt, is sometimes an inherent unresponsiveness on the part of the uterine muscle; but, more frequently, the fault lies with some nasal defect which modifies the action of the pituitary extract. Thus, its absorption may be prevented by the presence of scar tissue from a previous operation upon the nose; spurs may interfere with lodging the cotton pledget in a favorable location; a deflected septum may be a handicap, and other rarer types of nasal pathology will be encountered now and then. Emphasis is placed upon this practical detail because one should learn in advance whether or not the nasal passages are normal.

In my own series, two patients in whom the method failed at first responded to a repetition of the treatment on the following day. The later, successful results, I believe, are explained by the fact that the membranes had been ruptured twenty-four hours; consequently, the uterus was more sensitive to stimulation than it had been previously.

❦

Clarence W. Page, M. D. (2490 Channing Way, Berkeley).—During the past year and a half, in cases known to me, labor has been induced forty-two times, an incidence of 21 per cent. In two instances, labor was induced in the second trimester of pregnancy. In the first case, the toxemia had apparently been brought under control, but there was definite evidence of fetal death. The patient was bagged after failure to induce with castor oil, quinin, and pituitrin. The other was also a toxic case of the nephritic type, in which the patient was not improving under treatment. Here also a Voorhees bag was used.

All of the other cases were at term or beyond the expected date. Had I felt that there was much risk in induction, many of them could have been eliminated, as a good many were done at the patient's request.

Castor oil, quinin, and pituitrin failed to induce labor in twelve cases. Six of these succeeded after rupture of the membranes. The other six did not present sufficient indication for further procedures, and were permitted to await the spontaneous onset of labor.

The cases were about equally divided between primiparas and multiparas: twenty-three of the former, and nineteen of the latter.

The two babies born before viability were lost: one was dead before induction, and the other survived but a few minutes. Otherwise, all of the babies were discharged with the mothers without evidence of any injury. There was no maternal mortality, and no evident increase in morbidity. Neither was there any prolongation of the first stage of labor, as it averaged about eight hours.

The following shows results in more detail:

1. Castor oil only: Three patients, average first stage, 11 hours.

2. Castor oil, quinin, and pituitrin: Twenty-eight patients, average first stage, 7.5 hours.

3. Castor oil, quinin, pituitrin, and rupture membranes: Six patients, average first stage, 10 hours.

4. Rupture of membranes only: Three patients, average first stage, 8 hours.

5. Bag: Two patients.

❦

Daniel G. Morton, M. D. (University of California Medical School, San Francisco).—Doctor Holmes' report of ninety cases, in which labor was induced by means of rupturing the membranes, may be added to the ever-increasing evidence that this method of induction is not only highly effective, but innocuous for both mother and child. His fetal mortality of 1.1 per cent is proof of its harmlessness. Such a low mortality is hardly more than one would expect in a comparable number of cases in which the onset of labor was spontaneous. Quite properly, he has emphasized that there are certain contraindications—such as nonengagement of the presenting part, pelvic disproportion, a long rigid cervix, and a history of uterine atony in former labors. With these contraindications I am in hearty accord. I suspect that if the method be used in cases which are much more than a month short of term, the fetal mortality will rise perceptibly. Such a rise would be due to two causes, to wit: First, the frailty of prematures in general, and secondly, the added stress on the poorly developed fetal head, inevitable in a fairly rapid labor taking place in the absence of the cushioning effect of the intact amniotic sac. This was most assuredly the exerience of the ancients who used this method of induction to bring on labor prematurely in cases with contracted pelves. They gave up the method because of its high fetal mortality, failing to appreciate that prematurity *per se* had much to do with it. With a modern thoroughgoing appreciation of contraindications, fetal mortality can be kept at a satisfactorily low figure.

The principal danger in a method of this kind, which is highly effective and relatively harmless, lies in the possibility of its indiscriminate use. This should be avoided. Labor should be induced only upon definite indication.

LOBAR PNEUMONIA*

AN ATTEMPT TO EVALUATE VARIOUS METHODS OF TREATMENT

By W. E. R. Schottstaedt, M. D.
Fresno

Discussion *by Leo P. Guenther, M. D., Los Angeles; William J. Kerr, M. D., San Francisco; Ewin L. Bruck, M. D., San Francisco.*

An attempt has been made to evaluate various methods used in the treatment of lobar pneumonia over a four-year period, ending December 31, 1933. The records are from the medical services of the Fresno General Hospital and from private practice. Inasmuch as it was possible to type the relatively small group of private cases only, all reference to typing is ignored. There is no intention to discredit or minimize the value of serum therapy in Types I, II or VII, but in our county institution the methods employed must needs be inexpensive.

MORTALITY RATES IN THE DIFFERENT GROUPS

Our mortality rate in the ninety-one control cases is about that generally given in the medical

* Read before the General Medicine Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

TABLE 1.—*Results by Age Groups*

	Control		Pneumococcus Antigen		$KMnO_4$		CO_2KMnO_4 NaCl	
	Recovered	*Died*	*Recovered*	*Died*	*Recovered*	*Died*	*Recovered*	*Died*
1-10 years	14	1	9	1	9	0	4	0
10-20 years	12	1	4	1	10	0	4	0
20-30 years	12	4	4	0	17	1	3	0
30-40 years	14	3	8	2	14	1	4	0
40-50 years	19	7	7	1	6	1	3	0
Over 50 years	20	12	10	3	8	2	2	1
Totals	91	28	42	8	64	5	20	1
Mortality	30%		19%		7.8%		5%	

literature—30 per cent. The study includes all types and age groups of patients who remained in the hospital more than twenty-four hours; in other words those who did not die within twenty-four hours from the time of their admission.

The ninety-one control cases were given the usual symptomatic treatment—expectant, expectorant, heat, etc., with a mortality of twenty-eight cases—30 per cent.

A series of forty-two patients were given 1½ c. c. of pneumococcus antigen every six hours for two days, then less frequently. In this series, eight died—a mortality of 19 per cent.

A series of sixty-four patients were given potassium permanganate, as advocated in 1929 by John L. Chester,[1] who based his work on that of Herbert W. Nott of Birkenhead, England. We changed the standard solution used—two grains $KMnO_4$ to 1½ pints of warm water—to a solution of 1/4000. A retaining enema of six ounces was given every four hours to adults, and three to four ounces to children. The enema was given slowly with the patient lying on the left side. If at any time this was expelled, four ounces were given by mouth every three or four hours until the temperature dropped to 100 or below, when the permanganate solution was given twice a day until the temperature was normal. In this series we lost five patients—a mortality of 8 per cent.

ROUTINE USED IN ONE SERIES OF CASES

Going on the theory that many patients have an atelectasis preceding their pneumonia, and that there is a depletion of chlorides, the following routine was adopted later in a small series of twenty cases, and this order is posted as a routine treatment in one of the medical wards:

"CO_2–O 10 per cent to 15 per cent inhalations for ten minutes every two hours, for six inhalations.

"Sodium chloride ten grams daily, in addition to the salt in the diet. It may be given by rectum, 100 c. c. of a 10 per cent solution, once a day.

"Potassium permanganate solution 1/4000, warm, six ounces every four hours, by rectum. If the patient does not retain this, give four ounces by mouth every three hours.

"When the temperature has dropped to 100 or less, give permanganate twice a day."

In this series there was one death—a mortality of 5 per cent.

May I cite two cases for illustration:

REPORT OF CASES

CASE 1.—G. K., male, 56, who had had a cold for two days, was suddenly taken with a chill at noon on December 13, 1931. On admission to the hospital his temperature was 104, pulse 108, respiration 32, with moderate cyanosis and diminution of breath sounds on the right side. CO_2–O was given for ten minutes every two hours for five inhalations, and six ounces $KMnO_4$ 1/4000 per rectum every four hours. Within twenty-four hours the rectal temperature had dropped to 100. The permanganate solution was continued for another thirty-six hours, when the temperature was 98.6, pulse 78, respiration 17 and the patient had an uneventful convalescence. This was probably an atelectasis.

* * *

CASE 2.—R. D., male, 17, taken ill suddenly on April 24, 1932, with a chill, pain in the right chest, and findings, when first seen on the following day, of a right lobar pneumonia. The sputum was rusty, thick mucus, containing blood, some strepts and micrococcus catarrhalis and many pneumococci. He was given five inhalations of CO_2–O for ten minutes every two hours, and $KMnO_4$ 1/4000 solution per rectum for two days, when the permanganate solution was given orally because the patient expelled enemata. On admission his temperature was 104, pulse 104, respiration 34. After twenty-four hours these stood: temperature 105, pulse 120, respiration 40. At the end of the next twenty-four hours the temperature was 104; on the following day the temperature was 99.6, and thereafter a rapid recovery.

COMMENT

The age groups are as shown in the chart, from fourteen to eighty-one years, and the majority of cases occurred between October and March in each year.

The best results were obtained in the cases where treatment was started within two days from the onset of the disease.

In the control cases, we found intravenous glucose and influenza vaccines of doubtful value.

Morphin was not used because there is a diminution of pulmonary ventilation in these patients.

The oxygen tent is of value because it relieves the cyanosis due to anoxemia. The same may be said of the parental use of oxygen.

In the cases treated with pneumococcus antigen there is a drop of 10 per cent in the mortality rate, showing a definite value if this small series is any index. The temperature became normal at the end of seven days, whereas in the control group it did not reach normality until nine days.

The group of cases treated with $KMnO_4$ solution were afebrile in four and one-half days, while the group of cases including those where an atelectasis was apparently interrupted by the inhalation of CO_2–O (10 or 15 per cent), were afebrile within three days. However, the interesting and most satisfying thing is to see an improvement in cyanosis, usually after the first dose, followed very shortly by a slowing of the pulse rate, a deeper respiration, freer expectoration, a drop in temperature, and a more comfortable patient. This change cannot be explained by any chemical action, and is undoubtedly due to an absorption of oxygen by the patient, and a consequent relief of anoxemia. No toxic effects due to $KMnO_4$, as the result of either rectal or oral administration, have been observed or cited in the literature.

Regarding the chemical action, Chester cites three stages in the reduction of $KMnO_4$ corresponding with the separation of one, three and five atoms of oxygen per two molecules of the salt. The decomposition products are potassium permanganate, manganese dioxide, an antiseptic, and manganous salt.

There can be no possible objection to combining this method with the serum treatment in Types I, II and VII, nor as an adjunct to the use of pneumococcus antigen, for apparently its main value is in keeping the oxygen concentration of the blood more nearly normal.

Inasmuch as no one is justified in arriving at conclusions in such a small series of cases, I would appreciate a further application of this treatment by those who are in a position to give it a greater clinical trial.

1759 Fulton Street.

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1. Chester, John L.: Potassium Permanganate in the Treatment of Pneumonia, Annal. Int. Med., Vol. 2, No. 11, pp. 1175-1184, 1929.

DISCUSSION

Leo P. Guenther, M. D. (4433 Crenshaw Boulevard, Los Angeles).—Nonspecific therapy, such as is dealt with in this commendable report, being inexpensive, independent of type of pneumococcus, and avoiding delay in the start of treatment, would readily be adopted as a substitute for, or as an addition to, serum treatment if further experimentation bears out the findings of this paper.

It would be of interest to know more about the kind and method of preparation of the antigen used by Doctor Schottstaedt.

The table of results by age groups suggests a few observations. The cases in the group over forty years are, of course, poorer risks than those in the age groups under forty. As one passes from the control cases to those of the last group (combined treatment), one notes that the ratio of cases in the unfavorable age groups to those of the favorable decreases—a factor which must be considered in interpreting the results. Thus, the ratio of unfavorable to favorable in the control series is 75 per cent; in the antigen series, 68 per cent; in the potassium permanganate series, only 28 per cent; and in the last series, 33⅓ per cent.

The percentage of deaths in the four series calculated for those under forty years becomes approximately 17, 16, 4, and 0 per cent, which, though the number of cases is small, tends to support the main conclusions that the last two methods are effective in the lower age groups.

Since there is not much disparity in ratio between unfavorable and favorable age groups in the control and antigen cases (75 and 68 per cent, respectively), they are comparable. The results here suggest no benefit in cases under forty years, and decided benefit in the cases over forty (40 per cent mortality in the control, and 24 per cent in the antigen method). Here again the small number of cases indicates the need for further investigation, as recommended by Doctor Schottstaedt. If further work bears out this conclusion, it would suggest that one factor in the greater mortality in the older patient is a sluggish response to the infection with regard to adequate antibody formation (which is probably specific, if the author's conclusions that influenza vaccine is of no value, proves to be correct); and conversely that in the younger patients the fight against the toxemia is more prompt and needs no stimulation.

The success with potassium permanganate in the younger patients indicates that the anoxemia is probably an important factor as a cause of death in these cases.

This study reminds one that there are a great many more problems to be investigated than there are investigators. Perhaps it would be helpful if the American Medical Association were to have a department of research to coördinate the various workers, and to foster research by supplying problems to those desiring them. For example, in the investigation of the various newer therapeutic measures used in pneumonia, workers in each hospital desiring to carry on research could be supplied with separate problems. Cases of control and those subjected to the treatment under investigation should alternate for more reliable results. If several methods are being studied, the cases should be taken in rotation. The various newer methods of treatment, in addition to those mentioned in Doctor Schottstaedt's report, that could be more completely investigated, are: diathermy, artificial pneumothorax, treatment directed at disturbances in acid-base equilibrium, and the administration of oxygen by injection.

William J. Kerr, M. D. (University of California Medical School, San Francisco).—This interesting report of Doctor Schottstaedt should encourage others to study varius therapeutic measures in the treatment of lobar pneumonia. If, in a sufficiently large series of cases, one can reduce the mortality rate from 30 to 19 per cent by the use of pneumococcus antigen, it would mark a real advance; but if the rate should be reduced to less than 10 per cent by the use of potassium permanganate alone or in combination with sodium chlorid and induced hyperventilation, the achievement would be remarkable.

The author's groups of controls and specifically treated cases are not large enough to permit statistical study of age groups, duration of the disease before treatment was instituted, or by years to allow for periodic variations of severity and other well-known variables. The comparative mortality of a group treated by artificial pneumothorax would be of value. Likewise, the addition of approximately 2,000 cubic centimeters of fluid to the amount usually given by mouth would need to be evaluated. Other factors such as exhaustion from too frequent examinations have had a harmful influence in unskilled hands, and may show a reduced mortality in some series of cases.

A study such as the author has made should be extended to all centers of the State. Most of those

who have had experience in different sections of the country believe that this frequency of and mortality of lobar pneumonia is less in our State than in the eastern centers having a more rigorous winter climate.

Edwin L. Bruck, M. D. (384 Post Street, San Francisco).—We have had no experience whatever with the treatment of pneumococcus pneumonia by the use of potassium permanganate as described by Dr. W. E. R. Schottstaedt. It does not seem to us that the amount of nascent oxygen produced by the installation of such small amounts of potassium permanganate into the rectum would be of any material benefit to the patient, because it is inconceivable that this type of therapy would do anything that other methods of oxygen administration would not do.

Our experience with the treatment of pneumonia has been spread out throughout the past two years, during which time we saw 327 cases of pneumococcus pneumonia. It is imperative that before one attempts to evaluate the beneficial effects of therapy, certain other studies be made. First, typing is important. Secondly, the presence or absence of a positive blood culture is extremely important. It is also well to be acquainted with the fact that the severity of pneumococcus infection varies greatly from year to year. For instance, out of 250 pneumonias in the year 1932-1933, we saw only sixty Type 1, whereas out of seventy-seven pneumonias in the year 1933-1934, we saw fifty-two Types 1. Our Types 1 of 1932-1933 were treated (about 50 per cent) with use of Felton's antipneumococcic serum in large doses, and 50 per cent of them without, by the ordinary methods of nursing. In 1933-1934 none of them received Type 1 serum, and our mortality figures are essentially the same. Let it be stated here that of all of our pneumococcus infections of 1932-1933, about 50 per cent of them had a positive blood culture. The same figure was true in 1933-1934. Of the patients that had positive blood cultures, 60 per cent of them died in 1932-1933, no matter what the type of treatment. Likewise, 60 per cent died in 1933-1934, no matter what the type of treatment. Whereas with negative blood cultures, 19 per cent died in the first year, and 18.8 per cent died in the second year.

Our impression about serum is that it is of no value and is not necessary in those cases where there is a negative blood culture, because our figures would show that the difference in mortality, with negative blood cultures, with the use of serum and without the use of serum is negligible; whereas in positive blood cultures there is possibly some benefit from the early use of large amounts of specific serum, particularly in Type 1.

An interesting by-product of our investigation was a more or less accidental finding while trying to make studies on the chemistry of the chlorids during the course of lobar pneumonia. Chlorid is apparently excreted through the skin and is taken up in the exudate of the pneumonia; by replacing this chlorid with sodium chlorid by mouth, or sodium chlorid subcutaneously, we found that distention of the abdomen quickly disappeared. We later used this as a therapeutic measure and found that the administration of 25 grams or more of sodium chlorid daily in those pneumonia patients with tympanites had a universally beneficial effect upon this complication.

We have used artificial pneumothorax in the treatment of our pneumonias in sixteen patients. Of these, four died, one of whom had a positive blood culture Type 1; one had a Type 1 infection, was eight months pregnant and delivered her fetus during the time of her pneumonia. Her blood culture was negative. The third death was in a man who had a Type 6 pneumococcus in the sputum, and Type 6 in his blood stream, and died of a pneumococcus meningitis, Type 6. The fourth death was in a patient who had a pneumococcus Type 1 in his sputum and a negative blood culture.

These results tally very well with those of Behrend and Cowper, who treated eleven cases with artificial pneumothorax and reported their results in the *Journal of the American Medical Association* for June, 1934. Two of their patients died, one of whom died having a meningitis, which implies a positive blood culture, while the other was a Type 4 pneumonia in which organisms were present in the blood stream.

With regard to artificial pneumothorax we have no settled convictions regarding its efficiency as a method of treatment. We do know that pleural pain is promptly relieved, and that the disadvantage of using pain-relieving drugs is avoided. We intend to pursue this further.

To sum up our experience, we must conclude that high mortality rates accompany pneumococcus and bacteremia, no matter what the method of treatment. That the lowest mortality rates are in those patients who have negative blood cultures. That Type 1 antiserum is apparently of some therapeutic benefit in those cases of lobar pneumonia in which pneumococcus Type 1 is the etiological agent, and in which there is a bacteremia. That artificial pneumothorax as a method of therapy is an interesting experiment. That previous data in the literature, on this type of treatment, are of no value because of the lack of sufficient data upon bacteremia and the influence of such bacteremia upon mortality rates.

SOME CONTRIBUTIONS BY ANIMALS TO HUMAN HEALTH†

By A. C. Ivy, Ph.D., M.D.
Chicago, Illinois

INTRODUCTION

THE most universal curse on all living things is disease. Yet, how many people truly realize what biological science has done to eradicate disease from plants, animals and man. Very few, indeed. Why? Because our school histories record the story of wars, political events, and discoveries pertaining to improvements in methods of communication and transportation and say nothing, or little, of the ravages of pestilence and epidemic disease which has so frequently stricken mankind with horror and has ruthlessly destroyed the lives of hundreds of thousands of people.

In 1911 the average span of life was approximately fifty-three years. Today it is sixty years. This means that there are thirteen million people alive in the United States today who would otherwise be dead if the average life span of even the year 1911 still held in 1934.

Most of the medical science that we know today has been discovered within the past one hundred years. The average span of life one hundred years ago was thirty-five years. This means that if the average span of life had not increased to its present mark, fifty million people living in the United States today would be dead; almost one-half of the population.

† Editor's Note: This article presents the explanatory legends used in one of the exhibits of Northwestern University at the Century of Progress Fair at Chicago, to which editorial reference is made in this issue (page 272). California and Western Medicine is indebted to the courtesy of Professor Ivy not only for these legends, (to secure which it was necessary for him to send an assistant to the Fair Grounds, to make a copy), but also for the introductory comments which are here printed.

The various exhibits were prepared by Professors J. P. Simonds, C. J. Farmer, A. C. Ivy and A. A. Day.

If the increase of the average span of life, which affects the pocket book of every person who has an insurance policy and pays taxes, has not been due to medical science, to what has it been due? A frequent reply is "sanitation." The person who usually makes such a reply is ignorant of the fact that sanitation is the product of medical science and is universally directed and supervised by medical scientists. They forget that the Panama Canal could not be built until after the cause of yellow fever was discovered. They forget that chlorination of city water supplies could not be practiced until it was discovered that chlorination would kill typhoid germs and that typhoid was due to a specific germ. They forget that plague could not be effectively stopped until it was found that it was due to a germ and that the flea, rat and ground squirrel may carry the germ. They forget that when crops are threatened with disease, when animals are dying of unknown cause, and communities are stricken with the horror of epidemic disease, the legislators and citizens look immediately to biological and medical scientists for aid and relief.

It is sad, but nevertheless true, that sixty persons die every hour in the United States—we believe the most enlightened and humanitarian country in the world—of a preventable disease, such as smallpox, diphtheria, typhoid, plague, etc. This is not due to the lack of information on the part of medical science, but it is due either to the prejudice, ignorance or negligence of the public and law makers. This is plain language, but history reveals that it takes plain language to cause people to appreciate the truth. To be tactful is wise; to mince words is to manifest a lack of courage and to subvert the truth.

How is medical progress and science effected? It is effected in a combination of three ways. One is the discovery of a disease, its identification and natural history. Another is the application of physiology, its principles of function and how function is affected by disease. And, the third is experimental work on patients. The humane use of animals is absolutely necessary. Animal experimentation is the outstanding method of medical science. In biology living things must be used; in physics and chemistry inanimate things are used. *Animal experimentation* is not only humane, but is a manifestation of the highest type of humanity in that it *prevents unnecessary and random experimentation on man.*

Since one of the aims of the Century of Progress was to educate and lead people to appreciate the good that man has derived from the scientific advancement of the past one hundred years, the medical scientists of Northwestern University thought it was fitting that some of the contributions made by the helpers of man—the lower animals—to human and animal welfare alike, should be exhibited. A modest, inexpensive exhibit was all that could be afforded. In spite of the fact that the subject could only be exhibited very incompletely and without drama and a loud noise, the exhibit has attracted much attention and has been of definite educational value.

At the request of the editor of California and Western Medicine, the following outline of the exhibit is submitted:*

I

CONTRIBUTION OF ANIMALS TO HUMAN HEALTH

Mouse and Rat

CANCER

Heredity is an important factor in cancer of mice. It is not known to be so important in humans. "Tar cancer" can be induced in mice by the application of coal tar. Transplantation of cancer from mouse to mouse reveals the danger of handling cancers roughly. These little animals may help solve the riddle of cancer.

PNEUMONIA

Pneumonia is caused by the predominance in the lungs of one of several types of pneumococcus organisms. The mouse is used to diagnose the type, to determine the special kind of serum for treatment, and to standardize these serums which aid the patient to recover.

VITAMINS

Rats, because of their size and response, are ideal subjects for the study of these essential factors.

Vitamin A — *Growth-Promoting*

Vitamin A is found most abundantly in butter, milk, egg-yolk, tomato, carrot, cod and haliver oils. Its absence from the diet causes failure of growth, disturbances of vision, keratinization of epithelial membranes, lowered resistance to infection, even sterility.

Vitamin B — *Beriberi*

Vitamin B is found most abundantly in whole cereal grains, yeast, egg-yolk, and green vegetables. Its absence from the diet causes beriberi, nervous disturbances, poor lactation, decreased appetite, and loss of tone of the gastro-intestinal tract.

Vitamin C — *Scurvy*

Vitamin C is found most abundantly in oranges, limes, lemons, tomato juice, cabbage, and most fresh vegetables. Its absence from the diet causes scurvy and diseases of the gums and teeth. (The guinea-pig is used in vitamin C experiments.)

Vitamin D — *Rickets*

Vitamin D is found most abundantly in oranges, cod- and tuna-liver oils, and is also produced by the exposure of ergosterol to ultra-violet. The body, upon exposure to sunlight, is able to produce this factor. Its absence from the diet results in faulty dentition and poor bone formation.

Vitamin E — *Fertility*

Vitamin E is found most abundantly in wheat germ, lettuce, and watercress. Its absence from the diet of the rat causes a failure of reproduction (sterility.)

Vitamin G — *Pellagra*

Vitamin G is found most abundantly in yeast, glandular organs used for food (liver and kidney), fresh leafy vegetables, bananas, and tomatoes. Its absence from the diet results in skin eruptions, gastro-intestinal and nervous symptoms (pellagra). The distribution of yeast by the Red Cross to the people in the depression stricken areas of the South has almost eradicated this "depression disease."

Guinea-pig

DIPHTHERIA AND TETANUS

Antitoxins have reduced the death rate from diphtheria and tetanus. The potency of each lot of anti-

*Editor's Note.—On the walls of the exhibit booth, to the left of these explanatory legends, were grouped specimens, sections and photographs, designed to clarify the statements made in the text of the legends.

toxin can only be determined by testing its power to protect guinea-pigs against a fatal dose of diphtheria or tetanus toxin.

TUBERCULOSIS

Tuberculosis of the kidney can be detected in its early stages only by injecting sediment from the patient's urine into a guinea-pig and noting certain diagnostic signs.

This is a most delicate and valuable test.

DIPHTHERIA

Guinea-pigs are used:

To test toxin for use in the Schick test to determine susceptibility to diphtheria.

To test toxoid for preventive immunization against diphtheria.

To test the virulence of the germ in cases of diphtheria carriers.

SYPHILIS

The guinea-pig furnishes the "complement" for the Wassermann or blood test for syphilis.

This test is of great value in diagnosing and controlling treatment of the disease.

GLANDERS

Glanders in man and in the horse is almost invariably fatal.

The guinea-pig is a valuable aid in diagnosing and, therefore, in preventing this disease.

INFECTIOUS JAUNDICE

Infectious jaundice (Weil's disease) can be readily diagnosed by injecting the patient's blood or urine into a guinea-pig.

HYDROPHOBIA

Injection of an emulsion of the brain of a dog suspected of having rabies into the brain of a guinea-pig will establish the diagnosis in doubtful cases; effective treatment may then be instigated.

Dog

ETHYLENE ANESTHESIA

In searching for a less upsetting anesthetic than ether, the superior properties of ethylene gas were discovered. This and many pain-killing and sleep-producing drugs used in medicine have been discovered by using the dog as an experimental animal.

HOOKWORM INFECTION

The parasite called "hookworm" infects the intestines of man and dog.

Experiments to relieve the dog of this destructive parasite led to the discovery of drugs which eliminate the worm from man and dog without harm to the host.

SURGICAL ADVANCEMENT

Many new and difficult operations have been first tried and perfected upon an anesthetized dog. Much of the pioneer knowledge of delicate brain, nerve, lung, heart, stomach, and blood-vessel operations we owe to the assistance of these canine helpers.

INSULIN FOR DIABETICS

The experimental removal of a dog's pancreas caused sugar to appear in the urine.

The "laboratory" diabetes thus produced resulted in the discovery of insulin, which is an extract of beef pancreas. Two million in the United States will benefit from this discovery.

ADDISON'S DISEASE

When the tiny adrenal glands of a healthy dog were removed the dog died with symptoms like those of a man afflicted with the always fatal Addison's disease. An extract from these same glands yielded "cortin," which today relieves the sufferers of this formerly fatal disease.

STOMACH

Gastric Ulcer *Digestion*

This photograph* is of Ajax, a dog living happy and well, ten years after the removal of his stomach. The information thus gained has been applicable to patients suffering from stomach diseases such as ulcer, indigestion, and pernicious anemia.

LIVER

Anemia Prevented and Relieved

Feeding liver to dogs with anemia (pale, thin blood) caused red blood corpuscles to be abundantly formed. This discovery has made possible the control of pernicious anemia in man by using fresh liver or concentrated liver extract.

GALL-BLADDER

Gall-Bladder Colic and Stones

It was found that certain substances could be administered to a dog that were secreted in the bile, which made an x-ray of the gall-bladder possible. Applying this fact to man, the gall-bladder can be seen to fill and empty, thus detecting disease and stones.

PARATHYROID

Nervousness and Convulsions

When a dog's parathyroid gland is removed a nervous excitable state with convulsions, and even death, results, due to the inability of the body to use its lime or calcium. Extracts from this gland now save the lives of many patients.

RICKETS

Bone Deformity *Growth-Stunting*

Rickets was formerly a common disease.† Now, due to experiments upon puppies, it is possible to prevent deformities through dietary management.

Rabbit

Syphilis *Wassermann or "Blood Test"*

From the rabbit is obtained one essential ingredient of the test—the "amboceptor." This is often the only means of diagnosing this disease.

Pregnancy *Modified Aschheim-Zondek Test*

The rabbit is used in this very reliable test for pregnancy in its earliest stages and for the differential diagnosis of a special type of tumor (chorio-epithelioma).

Diabetes *Assay of Insulin for Treatment*

Overdoses of insulin cause convulsions, unconsciousness, and even death. The potency of each lot of insulin must be tested on rabbits before it is given to human patients.

Hydrophobia *Anti-Rabic Virus for Its Prevention*

This efficient prophylactic against this terrible and always fatal disease is the injection of ground-up, dried spinal cord or brain of a rabbit dead of rabies.

Cancer *Its Experimental Production*

Two Japanese scientists discovered that painting a rabbit's ear with tar produced cancer. Much of our modern knowledge of cancer has resulted from this discovery.

Anemia *Diseases of the Blood-Forming Organs*

The red cells and leukocytes of the blood are formed in the bone marrow, which can be studied very conveniently in rabbits. Much has been learned from this source.

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* Reference is to the photograph of the dog named Ajax, placed to the left of the legend.

† This legend referred to accompanying photographs of puppies.

Horse

Antiserums

Horses produce the antiserums used successfully in the treatment or prevention of diphtheria, tetanus (lockjaw), epidemic meningitis, snake bite, botulism, pneumonia, and of scarlet fever.

Cow

Smallpox *Vaccine*

This vial contains the lymph from cowpox pustules produced by inoculating the shaved and scarified skin of healthy calves with cowpox virus. Vaccination, discovered by Doctor Jenner in 1798, has reduced smallpox from the terrible pestilence of the eighteenth century to its present rare occurrence in the twentieth century.

ENDOCRINE PRODUCTS

From cattle slaughtered for meat are obtained most of the gland extracts used in the treatment of endocrine deficiencies, such as thyroxin for cretinism and myxedema, parathorome for tetany; and insulin for diabetes.

PERNICIOUS ANEMIA

Extracts of the liver of cattle and of other animals furnish a specific treatment for this disease so uniformly fatal before this method was discovered by experiments on dogs.

Monkey

By the use of the monkey much has been learned concerning the virus diseases which are not transmissible to other laboratory animals. Among these are especially:

INFANTILE PARALYSIS

From the monkey it has been learned that this disease is infectious, that the virus passes from the nose to the central nervous system; that a protective substance is present in the blood serum of many normal adults and can be used in the treatment of the disease.

YELLOW FEVER

By using the monkey a practical method of protective immunization of humans against this disease has been discovered. Had this been known five years ago the lives of Doctor Noguchi and other martyrs to this disease would have been saved.

II

DISEASES TRANSMITTED FROM ANIMALS TO MAN

Cattle

Undulant fever—Called "infectious abortion." Transmitted to man by milk.

Tuberculosis—Transmitted by milk from tuberculous cows, especially to children.

Septic sore throat—An acute disease acquired from contaminated milk.

Anthrax—Acquired by man from handling the hides of cattle dead of anthrax.

Actinomycosis—Called "lumpy jaw" in cattle. A chronic and usually fatal disease in man.

Tapeworm—Taenia saginata is acquired by eating uncooked infested beef.

Cowpox—A mild disease in man that protects him from smallpox. Observation of this fact led Jenner to the discovery of vaccination.

Swine

Trichinosis—A very painful and often fatal disease acquired by eating uncooked or poorly cooked "measley" pork or sausage.

Tapeworm—The tapeworm, Taenia solium, is transmitted to man by infested uncooked pork or sausage.

Roundworm—This intestinal parasite may be acquired by man from the pig.

Parathyroid fever, undulant fever, anthrax, and *tuberculosis* may be transmitted to man from swine.

Goat

Undulant fever—Also called "Malta fever." It is acquired from the milk of infected goats.

Sheep

Anthrax—Sheep are the most common source of this fatal disease which occurs in man in three forms: "wool-sorter's disease," intestinal anthrax, and malignant pustule. Other diseases acquired from sheep are: *Foot and mouth disease* and *liver flukes.*

Mouse

Bubonic plague, tularemia, amebic dysentery, trichina, are spread to man by the mouse.

Rabbit

Tularemia—The rabbit is the chief source of infection in this very severe disease.

Fish

Tapeworm—The "fish tapeworm," Diphyllobothrium latum is acquired from eating uncooked infested freshwater fish. Its presence in man causes a severe anemia.

Parrot

Psittacosis—A severe and often fatal disease transmitted to man.

Dog

Echinococcus disease—Taenia echinococcus, a small tapeworm which sometimes inhabits the intestine of dogs, gives rise in man to cysts that may be the cause of death.

Hydrophobia—The dog is the animal chiefly responsible for the perpetuation of this disease, so fatal to both man and dog.

Tapeworm — A tapeworm, Diphyllidium caninum, may be acquired by man (especially children) from the dog.

Mange—Of the three types of mange from which dogs suffer, one is transmissible to man.

Ringworm—The dog is subject to four types of ringworm which it may occasionally transmit to man.

Scarlet fever—Dogs are susceptible to the scarlet fever germ. Close association of a dog with a child suffering from this disease may endanger other children.

Cat

Hydrophobia—The cat may transmit this disease to man; however, it is not so great a menace as is the dog.

Poliomyelitis (infantile paralysis)—Cases of apparent transmission of this disease to man are on record.

Rat-bite fever—The cat may carry the germ of this disease.

Giardia—An intestinal protozoön which may be acquired by man from the cat.

Rat

Entameba histolytica—The microörganism of amebic dysentery may be harbored by the rat and transmitted to man.

Trichinosis—The rat is the chief source of infection of swine and, therefore, responsible for the perpetuation of the disease.

Bubonic plague—The rat is the chief means of the spread of this terrible disease, especially in cities.

Rat-bite fever—A chronic, disabling disease acquired from a rat bite.

Tularemia and *tapeworm* — Diseases occasionally transmitted from rats to man.

Horse

Glanders—This is the most serious and frequent disease transmitted from the horse to man. It is fatal to both.

Actinomycosis, foot and mouth diseases, hydrophobia, are diseases occasionally acquired by man from the horse.

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SPECIFIC GRAVITY IN SPINAL ANESTHESIA

By Elmer M. Bingham, M. D.
Riverside

Discussion *by C. D. Leake, Ph. D., San Francisco; Thomas A. Card, M. D., Riverside; C. Van Zwalenburg, M. D., Riverside.*

WHILE spinal anesthesia is becoming more and more popular, many of the medical profession would still refuse it for themselves and for their patients. Since detrimental after-effects have not been definitely established in many thousands of cases, this refusal must be based on a fear of the technique itself. While the procedure is simple in itself, a complete knowledge of all the factors is imperative. If the profession could visualize just what takes place in the spinal canal, their understanding of the procedure would be greatly increased. It was for this purpose that these experiments were done, accurate in principle and far simpler than the studies on dogs and cadavers.

FUNDAMENTAL PHYSICAL FACTORS

A few fundamental physical factors will be stressed which have not been emphasized sufficiently before. These factors are based on the specific gravity of the solutions involved. As early as 1907, the specific gravity of the anesthetic agent was augmented to 1.030 and 1.080 by the addition of dextrose and saline. Some twenty years later Pitkin developed an agent of specific gravity less than that of spinal fluid. The importance of specific gravity has been considered and discarded from time to time. The present experiments may aid in explaining failures of the past and in avoiding failures in the future.

A simple laboratory experiment will effectively demonstrate the rôle of specific gravity in controlling the anesthetic level obtained. An artificial spinal canal is readily made from a piece of glass tubing two feet long and of sufficient caliber to contain fluid equivalent to that in the spinal canal—60 cubic centimeters. (This amount varies in the canal and has not been established.) One end of the tubing is bent upward to form a reservoir representing the cranial cavity, and to produce pressure. A short segment at the other end, joined by a piece of rubber tubing, permits the punctures to be made. For accuracy, the cervical, thoracic, and lumbar curves are added, but these are not essential in demonstrating the principle. This canal is filled with dextrose-saline solution of specific gravity equal to that of spinal fluid—in the absence of spinal fluid itself. The anesthetic agent is colored with a drop of methylene blue.

Fig. 1.—The glass canal with Novocain solution.

ANESTHETIC SOLUTIONS

Three groups of anesthetic solutions are considered:

1. Those lighter than spinal fluid, specific gravity less than 1.005 ±. These include spinocain and aqueous solutions of novocain of less than 2½ per cent.

2. Those approximately the same as spinal fluid, specific gravity 1.004-1.008. These include nupercain (0.5 per cent of the agent in buffered solution) specific gravity 1.003; pantocain 1 per cent in 0.67 per cent saline solution, specific gravity 1.0068; and aqueous solutions of novocain of 2½ per cent, specific gravity 1.005.

3. Those heavier than spinal fluid, specific gravity greater than 1.005 ±. These include all solutions of novocain crystals in spinal fluid, gravocain, and nupercain or pantocain, to which novocain crystals have been added. The specific gravity will vary with variations in amounts of crystals or solution used.

While the specific gravity of the spinal fluid will vary in different individuals, or with the state of hydration or disease, this variation is negligible in comparison with the wide variations in the specific gravity of the anesthetic solutions; especially so when spinal fluid is used as the solvent. The volume of spinal fluid and the pressure will vary, but can have little bearing. The final specific gravity of the injected fluid is the only factor to be considered in determining the amount to be injected and the subsequent posture of the patient. Those who routinely dissolve 200 milligrams of novocain crystals in 2 cubic centimeters of spinal fluid must depend entirely on posture to control the level; the resultant 10 per cent mixture flows too rapidly in the canal to be easily controlled. The agents giving prolonged anesthesia are of definite value, but they cannot be given with the same technique used for novocain crystals, if the level of anesthesia is to be under control.

RESULTS NOTED

1. Spinocain: When the canal is level, the anesthetic solution rises to the top of the tube and slowly spreads out in both directions, leaving the lower half of the tube clear. Thus, with the patient placed immediately on his back, motor paralysis, but little sensory change, may be produced. With the "head" elevated 15 degrees, the anesthetic is all in the reservoir in less than ten minutes, leaving the entire canal clear. When elevated only slightly the anesthetic spreads upward rapidly. A study of the spine in the lateral view, or a glance at the diagram shows that there are no obstructing curves for floating solutions until the upper cervical region is reached, and then only a slight curve. With the head lowered 15 degrees, the solution accumulates in the caudal end of the canal, diffusing too slowly to reach satisfactory levels before the agent is fixed or inactivated by the tissues.

2. Nupercain and pantocain: These solutions behave in much the same manner, pantocain being slightly the heavier. Diluted with spinal fluid be-

fore injection, the specific gravity approximates that of the fluid itself, and the agent remains practically stationary when the tube is tilted. Diffusion during fifteen minutes is very slight. Thus the level will depend on the volume injected; the posture of the patient and the angle of the table will have little, if any, influence. Is this perhaps the explanation for the fewer unfavorable reactions seen with these drugs than observed with novocain? They do not drift, therefore are not so likely to reach the higher levels.

3. Solutions of novocain crystals in spinal fluid: The specific gravity of these solutions varies with the concentration, reaching 1.025 when 200 milligrams are dissolved in 2 cubic centimeters of spinal fluid (10 per cent). The addition of nupercain or pantocain makes no difference—all are heavier than spinal fluid unless used in aqueous solution. Therefore, they drift when the tube is tilted. The rapidity of the drift is proportional to the concentration, and depends also upon the angle of the tube: 2 cubic centimeters of a 10 per cent solution will reach as high a level as 8 cubic centimeters of a 2½ per cent solution, with the "head" lowered. These solutions layer along the lower portion of the canal, reaching sensory rather than motor nerves. There is an added factor of safety provided by nature when these solutions are used: drifting along the posterior surface of the canal, their spread is inhibited by the upward curve of the canal in the midthoracic region. Unless the table is lowered too acutely, the anesthetic will accumulate in this region and go no higher. Does this not explain why so many of these anesthetics stop at the costal margin or nipple line? The thoracic curve should be given more credit for the small number of high levels which are seen. Therefore, increase this curve by placing the head and shoulders on a pillow. Mechanical dilution, as the anesthetic spreads, is the only other factor of safety. When the anesthetic has become fixed, the Trendelenburg position may be used and is desirable. When punctures are made with the patient horizontal, the downward curve or inclination of the canal may also be a factor in starting this drift.

4. The needle bevel: In these experiments it was found that the direction in which the bevel of the needle pointed made little difference when the injection was slow. When the solution was injected rapidly, or when a needle of small caliber was used, the anesthetic could be forced in the direction the bevel pointed. If spinal fluid pressure has any bearing, it is on this factor.

5. Diffusion and dispersion: By layering spinal fluid and the various anesthetic agents in test tubes, the rate of diffusion was studied. In fifteen minutes the amount was hardly perceptible, while in two hours it was insignificant. The higher concentrations of novocain showed a greater diffusion, as should be expected. The spinal canal is not a test tube and the spinal fluid is not entirely without circulation. The dispersion of the anesthetic agent may be increased by movements of the patient, especially flexion or extension of the spine. Pulsations of regional vessels may set up small currents which favor dispersion. On the other hand, branching nerves may interfere with the fluid dispersion, or with its flow due to specific gravity. Proper technique should avoid unnecessary motion of the patient.

CONCLUSIONS

1. The specific gravity of the agent used in spinal anesthesia is important, and must be considered in giving safe anesthetics.

2. An anesthetic agent of specific gravity greater than spinal fluid is desirable because: (*a*) The effect is primarily sensory; (*b*) the level may in part be controlled by the angle of the table; (c) the natural curves of the spine and canal inhibit the flow of the agent to higher levels.

3. The spread of the anesthetic agent by diffusion is insignificant.

4. Since the spinal canal varies in diameter at different levels, the height reached is better controlled by drift than by volume injected.

Riverside County Hospital.

DISCUSSION

C. D. Leake, Ph.D. (University of California Medical School, San Francisco). — My qualifications are such that I may attempt to discuss only those portions of Doctor Bingham's interesting paper which relate to the drugs he mentions. To begin with, it is high time that the medical profession realized the tremendous importance of the names of drugs. Commercial pharmaceutical houses frequently take advantage of the ignorance of physicians with respect to chemistry by disguising, under a readily remembered trade-marked name, a common chemical or mixture of chemicals which then may be exploited at exorbitant prices. The names of chemicals given in the United States Pharmacopeia are public property, and it is in the interest of public welfare to use these names, and these names only, when referring to the chemical to which they are applied. Thus, "Novocain" is the trade-marked name, owned exclusively in the United States by the H. A. Metz Laboratories, Inc., for the chemical described in the United States Pharmacopeia as procain. Since procain is the public name, its general use by physicians would tend to keep the chemical described under this name on an open competitive basis so that no unreasonable prices may arise from the exploitation of a trade-marked name. "Spinocain" is also a trade-marked name, owned exclusively in the United States by the H. A. Metz Laboratories, Inc., and it is given to a mixture of salts of procain and strychnin with starch. There is no pharmacological reason whatsoever to include strychnin in a local anesthetic solution, and it is extremely doubtful that the addition of starch produces changes in specific gravity which are sufficiently pronounced to prevent diffusion and flow of the mixture in spinal fluid in the body. Dr. G. B. Pitkin, who is said to have developed "Spinocain," seems to specialize in the promotion of peculiar mixtures of drugs which the H. A. Metz Laboratories, Inc., have trade-marked to exploit to physicians (*Journal of the American Medical Association*, 99:936, September 10, 1932). "Gravocain" is a new one for which I can find no reference in reliable medical literature, but I expect that it is a trade-marked name of a slight variant of a starch and local anesthetic mixture similar to "Spinocain." In order to make any chemicals available for medical use, it is necessary to give some commercial protection to the company first undertaking to manufacture them. This is customarily done by patenting the chemical, and usually by trade-marking it at the same time. The patent rights expire after seventeen years, when anyone may compete in the manufacture of the agent. Unfortunately, however, the trade-mark is indefinite.

Trade-marked names are the only ones possible for patented drugs. As soon as the patent expires, however, a public name should be given to the drug, if it is a useful one, in the pharmacopeia, and then physicians should only use the public name. "Nupercain" is the trade-marked name of a patented quinin derivative developed by the Ciba Company, Inc., and until the patents on it expire it can have no other name. "Pantocain" is also a trade-marked name for a patented local anesthetic of the procain series, and again no other name can be used for it until the patents expire.

The pharmacologic evaluation of local anesthetics is a long and tedious task. Clinicians do not always examine such scientific studies with the care which they deserve. Usually the clinician relies upon the advertising material distributed by the company interested in exploiting the local anesthetic. It is doubtful if any new local anesthetic can be demonstrated to be superior to procain for spinal anesthetic, because of its almost unique wide margin of safety between the effective anesthetic dose for nerve tissue on local application and the dosage required for toxic effect.

❊

Thomas A. Card, M. D. (Glenwood Building, Riverside).—Doctor Bingham has pictured very graphically the dissemination of anesthetic agents when injected into the spinal canal. The relation of specific gravity of these agents and the posture of the patient is also beautifully illustrated. This experimental work bears out the clinical findings of Maxson in California and Western Medicine, November, 1933.

The control of spinal anesthesia levels has been one of the big problems in this field of anesthesia. Many surgeons are slow to adopt a method so adaptable and so safe for many operations because of the feeling of insecurity in controlling the anesthetic. For some months, in my service at the Riverside County Hospital and in my private practice, I have followed the principles as set out in this paper, and I have found that the anesthetic level has been more accurately controlled than by the technique previously used.

❊

C. Van Zwalenburg, M. D. (308 Citizens National Bank Building, Riverside).—This clever device makes a very clear demonstration of the important factors controlling the degree and the level of anesthesia.

The colored fluid is easily followed with the eye, and shows definitely the rate, the extent and the direction of its diffusion.

If those using spinal anesthetics will repeat this demonstration, their ability to locate and limit the degree and extent of anesthesia will be greatly advanced, and the safety of the patient more nearly insured.

❊

Doctor Bingham (Closing).—Doctor Leake has called attention to a rather common error made in discussions and literature on procain anesthesia. We have been using novocain clinically and experimentally. Gravocain was also developed by G. B. Pitkin in a manner similar to spinocain, but heavy as the name implies. It is also marketed by H. A. Metz Laboratories, Inc., and was intended for use in obstetrics where the Trendelenburg position is undesirable. The only objection to novocain or procain anesthesia is its limited duration.

Nothing has been said regarding anesthetics administered with the patient in a sitting position. It is a technique which we have not used. If the anesthetic solution is heavier than spinal fluid, it falls to the base of the canal and must be disseminated from this point. For anesthesia limited to the rectum and perineum, it should be the procedure of choice. Obviously, the sitting posture must not be used with anesthetic solutions lighter than spinal fluid.

THE PROBLEMS OF OBESITY*

By Alfred E. Koehler, M. D.
Santa Barbara

Discussion *by Lovell Langstroth, M. D., San Francisco; Bertnard Smith, M. D., Los Angeles; Fletcher B. Taylor, M. D., Oakland.*

"Leave gormandizing; know the grave doth gape
For thee thrice wider than for other men."
Shakespeare, *Henry IV.*

THE lay person is concerned with overweight largely from the standpoint of appearance and the fashion of slenderness, but to the physician it is a problem of disease and life expectancy. It is hardly necessary to dwell on the dangers of obesity to a medical audience. It will suffice to mention structural and postural strains, increased hazard in infectious diseases, shortening of life span, associated mental and emotional disturbances, increased incidence of gall-bladder disease, disturbances in cholesterol metabolism and, above all, the relation to cardiovascular disease. There is, indeed, an opportunity for meditation on this latter point, if the recent claims of von Zorday[1] are correct: that in the light of the more modern and delicate methods, 90 per cent of obese patients show evidence of injury to their circulatory apparatus. There can be little doubt of the important rôle that overweight plays in the ever-increasing death rate due to the so-called degenerative diseases, particularly hypertension, myocardial damage, and diabetes.

The present-day real problems of obesity are related to its cause or causes. It is altogether probable that, in understanding the etiology of overweight, we will have a proportional increased insight into the causes of the associated degenerative diseases.

We have approached the problem largely from the standpoint of the energy balance. There is nothing that throws any doubt on the validity of applying the basic laws of energy to the problem of weight. It is presumptuous to disregard the first and second laws of thermodynamics, and state that certain subjects could not be reduced by an adequate diminishing of caloric intake; and yet this statement is frequently made or implied even in present-day literature. Obesity is demonstrably a condition in which the caloric intake is in excess of the maintenance requirement.

METHODS

Our studies for the past few years have concerned themselves primarily with the determination of the maintenance requirement in underweight and overweight. Chamber calorimeter measurements in the past have been inadequate, inasmuch as exact living conditions could not be duplicated for sufficiently long periods of time. We have used the following two methods in which the living conditions were not disturbed and the energy

* From the Santa Barbara Cottage Hospital and the Sansum Clinic, Santa Barbara.

Read before the General Medicine Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

balances were determined over periods of one or many months:

1. The caloric intake was so adjusted that the patient neither gained nor lost.

2. The maintenance value was determined on submaintenance diets (800 to 1000 calories) by calculating the daily weight loss, as fat or nitrogen, in terms of caloric values, and adding these to the caloric intake.

The second method is the more practical, inasmuch as it permits the patient to reduce while the observations are being made. This method requires the determination of the nitrogen balance, which was done by the Kjeldahl method.

CALORIC VALUE OF ADIPOSE TISSUE†

The caloric value of adipose tissue was determined in a series of obese cases by removal and analysis of tissue obtained during laparotomy. The average of the analysis was as follows: fat, 90 per cent; protein, 0.10 per cent; carbohydrate, trace, mean caloric value of one kilogram, 8,100 calories (one pound equals 3,670 calories). Thus, a subject losing one-half pound (0.226 kilogram) a day, and remaining in nitrogen balance, would consume 1,835 calories for the combustion of this fat; and if the caloric intake was 1,000 calories, then the total (1,000 plus 1,850, or 2,850 calories) would represent the maintenance caloric value. In our series, correction was made for protein lost or retained as determined by the nitrogen balance.

MAINTENANCE CALORIC VALUES

Table 1 gives the results of study of thirty-six cases of obesity grouped under various divisions of maintenance requirements. The average amount of daily activity was estimated for these cases as ranging from two to seven miles walking. (In the later part of this series, the mileage was actually determined by a pedometer. None of these cases was bedridden.) Since one mile of walking equals about fifty-seven calories, or six grams of fat,[3] the maximum amount of walking in this group of patients represented at the most (7 x 56.8) 398 calories or (7 x 6) 42 grams of fat per day.

The maintenance requirement of the cases studied (Table 1) varied from 800 to 3,500 calories. Of the cases studied, 63.9 per cent fell in the 1,500 to 2,500 caloric range, and 36.1 per cent in the 2,000 to 2,500 caloric group; which we believe is approximately the caloric requirement for normal persons of similar age and activity. It will be noted that some cases exceeded the normal intake by 1,000 calories. With a maintenance of 3,450 calories (highest observed), the caloric intake must, of course, have been considerable in excess, for many of these cases were in a state of weight-gaining before the period of observation. Some of the values in this series includes the effect of thyroid medication; but since we rarely use thyroid when weight loss is satisfactory (as it always is in subjects with higher caloric

† The lengthy detailed data will be published elsewhere.

TABLE 1.—*Determined Maintenance Caloric Requirement for Twenty-four Hours of Thirty-six Obese Cases*

Cases		Maintenance Calories
Number	Per Cent of Total	
2	5.6	800-1,000
2	5.6	1,000-1,500
10	27.8	1,500-2,000
13	36.1	2,000-2,500
6	16.7	2,500-3,000
3	8.2	3,000-3,500

requirements), the thyroid effect must be subtracted from some of the cases with the lower values. This still further lowers the already low maintenance values.

The above deductions are, of course, only valid provided that no gross changes in the water-balance have occurred. It is usually assumed that the shorter periods of one or two weeks in which subjects fail to lose weight—as, for example, Grafe's [3] case—are due to water retention. If this is the case, then there should be a greater corresponding loss of weight later as the water is again lost; or, if the water is not lost, then if sufficient time elapses, say three or more months, sufficient hydration should be established to be demonstrable. Such a condition, of course, existed in the so-called war edema, but we have not been able to demonstrate any hydration, with a few possible exceptions in any of our cases, either objectively or in changes in serum proteins, specific gravity or water content. Our studies in regard to blood hydration are not completed; but our data to date in a small series of normal, obese, reducing and reduced subjects show no significant variation that would lend itself to support the hydration theory.

THE DECREASE IN MAINTENANCE REQUIREMENT

The maintenance requirement on a reducing diet is by no means constant. As subjects are on a constant submaintenance diet, the maintenance requirement gradually approaches at least to a

TABLE 2.—*The Nitrogen Balance in Twenty-four Cases of Obesity With a Protein Intake of Eighty-six to Ninety-three Grams*

Nitrogen Balance	Caloric Intake		
	790-900	900-1,010	790-1,010
Gram			
+3 to 4	0	1	1
+2 to 3	1	1	2
+1 to 2	1	3	4
+0 to 1	3	0	3
Total	5	5	10 (41.7% of total)
—0 to 1	1	1	2
—1 to 2	3	0	3
—2 to 3	1	1	2
—3 to 4	2	1	3
—4 to 5	0	2	2
—5 to 6	1	0	1
—6 to 7	0	1	1
Total	8	6	14 (58.3% of total)

TABLE 3.—*Reducing Diets*

Diet According to:	Calories	Protein Gram	Carbohydrate Gram	Fat Gram	CHO/ /FAT
Group I [4]					
Banting	1,100	172	81	8	10.0:1
Oertel, maximum	1,600	170	120	45	2.7:1
Oertel, minimum	1,180	156	75	25	3.0:1
Ebstein	1,300	102	47	85	0.5:1
Hirschfeld, maximum	1,400	137	63	67	0.9:1
Hirschfeld, minimum	1,000	100	53	41	1.3:1
Kisch, maximum	1,116	200	100	12	8.3:1
Kisch, minimum	1,086	160	80	11	7.3:1
v. Noorden (a)	1,300	120	118	35	3.4:1
v. Noorden (b)	1,300	90	148	35	4.2:1
Moritz, milk cure, av. 1,600 c.c.	1,010	51	72	54	1.3:1
Umber	1,008	96	107	8	13.4:1
Dujardin-Beaumetz	1,457	116	125	50	2.5:1
Bouchard	1,250	83	55	71	0.8:1
Evans and Strong	360	58	14	8	1.7:1
Group II [5]					
Western hospitals:	1,000				
maximum	.....	70	.....	....	5.0:1
minimum	.....	50	.....	....	4.0:1
Eastern hospitals:	600 to 1,000				
maximum	.....	80	.....	....	5.0:1
minimum	.....	40	.....	....	1.0:1
average	1,250 to 1,500	80	.....	....	2.5:1

certain limit the caloric value of the diet, as is manifested by a gradual decrease in daily weight loss.

In a series of twelve obese cases that had been on a constant diet (800 to 1,000 calories) for a period of at least six months, it was noted that the average daily weight loss for the first three months was 0.188 kilogram (0.413 pound), while for the second, or last three months, it was 0.069 kilogram (0.151 pound), a decrease of 56.9 per cent. For the comparable period, the average basal caloric requirement changed from 1,599 to 1,534 calories, a decrease of only 4.1 per cent. In some of these cases thyroid was given during the second three months in amounts that raised the basal caloric value considerably above that for the first three months, and at the same time there was a decrease in the daily weight loss or total metabolism. This diminution in total metabolism is one of the important and difficult problems associated with weight reduction in the markedly obese. It is usually easy to take off the first fifty pounds, but the second and third fifties may represent real difficulties. The reason for the diminution in metabolism may be found in the attempt of the body to conserve its needs in the face of deprivation of which the caloric deficiency is the most outstanding. It was of particular interest for us, however, to note that in the twelve cases studied from the standpoint of diminution in the total metabolism, seven cases in which the nitrogen balance was determined all showed a greater protein loss than intake. Since there is no demonstrable excess of protein in obesity (the nitrogen content of our analyzed adipose tissue was insignificant), loss of protein may mean a loss from normal essential protoplasm, and the organism may lower its total metabolism to conserve this most important constituent. Further work on this phase of the problem is in progress.

THE NITROGEN BALANCE

Table 2 shows the nitrogen balance in twenty-four cases of overweight subjects with a protein intake of 86 to 93 grams per day. The majority of cases on either the 800 or 1,000 calorie diets were in negative nitrogen metabolism. Of the total cases studied (800 to 1,000 calories), 58.3 per cent lost more protein than they received. In four cases the loss amounted to 5 to 7 grams nitrogen or 31 to 44 grams protein daily. In general, patients who were on a nearly balanced protein diet had more energy, and better mental spirit. In all probability, diets deficient in protein are unwise. The higher protein requirement of the reducing diet, as compared with the normal diet, is of course due to the lack of the sparing action of carbohydrates and fats in the diet.

An inspection of the American reducing diet reveals a shortage of protein (see Table 3) while the German diets, using 90 to 172 grams, should be adequate. In the light of our present information, I believe that the 800 to 1,000 calorie diet should contain at least 90 to 100 grams protein,

not less than 70 to 80 per cent of which should be of high quality (milk, cheese, meat, or eggs).

COMMENT

Obese individuals can be divided, as outlined above, into two classes: (1) those with a maintenance metabolism above the normal range, and (2) those with a metabolic requirement below the normal level. In the first group, the treatment is simply that of reducing the caloric intake with an otherwise adequate diet, and weight reduction is always satisfactory. In the second group the treatment consists of increasing the energy demands. This can best be accomplished by exercise, and also by gradually and carefully pushing thyroid medication to symptomatic tolerance. There is no evidence in the literature, or in our experience, that any pituitary or gonadal preparations are of any value in increasing the energy output. In the second group, the use of dinitrophenol may be indicated; but our experience with it on weighed diets has not been satisfactory, and toxic complications have caused us to discontinue its use until such time when careful experimental study has fully demonstrated its usefulness, limitations, and dangers.

Any means or medication in obesity that increases the energy metabolism, and consequently increases the load on the cardiovascular apparatus, must be used with the greatest caution in a condition with such a high percentage of circulatory involvement.

SUMMARY

1. Adipose tissue obtained from obese subjects is equivalent to about 8,100 calories per kilogram, or 3,670 calories per pound. The fat tissue contained an insignificant amount of protein.

2. A method is outlined for determining the maintenance caloric requirement based on the weight loss calculated as the equivalent of fat burned and the caloric intake. Calculations over short periods of time are not reliable.

3. Based on this method, we have determined the maintenance value of thirty-six cases, and have found the majority of cases within or close to the normal range. Some were in the vicinity of 1,000, and others over 3,000 calories.

4. The maintenance requirement gradually decreases on a reducing diet, and the daily weight loss gradually diminishes.

5. With a protein intake of about 90 grams and caloric value of 800 to 1,000, the majority (58 per cent) of our cases studied (twenty-four) showed a negative nitrogen balance. The protein intake should be 90 to 100 grams and higher in some cases.

6. We have found no reason to believe that hydration is an appreciable factor in the majority of cases in decreasing weight loss, as judged by objective findings and studies on blood plasma hydration when the periods of observation were extended three to six months.

317 West Pueblo Street.

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DISCUSSION

Lovell Langstroth, M. D. (516 Sutter Street, San Francisco).—There is no question but that obesity and degenerative disease are frequently associated; the fat individual is certainly not as good a risk as the normal one. But I am not so sure that the relation of obesity to degenerative disease is anything more than a mechanical effect. It is certainly safe to say that obesity impedes exercise, tends to prevent the normal expansion and contraction of the blood vessels so necessary to vasomotor elasticity, prevents full normal respiratory movement, and throws an enormous weight load on the circulatory system.

The present interesting method of determining maintenance caloric requirement is, of course, based on present-day knowledge of thermodynamics. But we should not suppose that the problem is by any means solved. Doctor Koehler's own figures show another aspect of the problem that is familiar to all of us: he states that he maintained two patients on diets of 800 to 1,000 calories, and that in order to cause them to lose weight he had to resort to thyroid or to increased exercise. Now the basal requirement of these patients, as determined by indirect calorimetry, was probably 300 or 400 calories above the maintenance requirement, as determined by him (in twelve of his cases it was 1,500 plus calories). We thus have the paradox of a patient who consumes, theoretically, 1,500 calories holding his weight on a diet of 1,000 calories or less. If these patients are not getting more than the diet given, and if we are not overestimating the basal caloric requirement, we must be misunderstanding the laws of thermodynamics.

Furthermore, I do not see how we can explain the wide spread in the maintenance requirements of the various patients (800 to 3,500 calories) by anything but individual peculiarity. Whatever the response to dietotherapy, and regardless of the laws of thermodynamics, I do not believe that this spread is brought about merely by increased caloric intake; it cannot be adequately explained by the basal requirements. In other words, I do not believe that obesity is merely a problem of increased food intake. My experience and the experience of others is that many of these patients have a special tendency to overweight without disease of the ductless glands, and in spite of the fact that they live on average diets. I am at a loss to explain their obesity on the basis of our present knowledge of thermodynamics.

On the other hand, there is undoubtedly a psychological aspect to the problem of obesity. A few of these patients satisfy their will at the table because that is one place where no one can say "no" to them; a reducing diet is an intolerable frustration. They rationalize their desire to give it up by developing new symptoms which cannot be controlled unless one goes behind the diet to the more fundamental problem of the will.

Bertnard Smith, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Koehler has presented a simple method of estimating caloric maintenance values that may be of practical value in the dietetic treatment of obesity. However, the actual problems in weight reduction are found when the actual maintenance re-

quirement is so low in caloric value as to make diet reduction to the extreme low values a serious risk of critical disturbances of body chemistry. It is probable that these problems will be shown in the full data of Doctor Koehler's studies.

Respiratory studies on obese cases in the last two years have indicated variations from normal that closely resemble the studies carried through on patients with circulatory failure. The causal factors in the obese appear to be mechanical and chemical. The mechanical factor should be cleared as the excess deposits of fat are lost with reduction of weight. The control of the body chemistry in obesity should become more difficult to control when methods of treatment include any method that stimulates the general body metabolism, either by exercise or medication.

The obese show an abnormal lactic acid response to moderate exercise that is abnormal, and which appears due to diminished power in these individuals to normally store carbohydrate. It is important that cases of obesity should be held under close study for some time after exercise is prescribed, and there is certainly a need for all the caution that Doctor Koehler advises when any medication is used to furnish this stimulation.

With the high lactic acid response in obesity to moderate exercise, there may occur some compensatory shifting in basic ions in the attempt to maintain acid-base balance in body fluids. It would seem possible for this change of base to cause a negative fluid balance sufficient to effect weight and still give no indication of hydration by the more simple studies on plasma fluid increase.

Maintenance of nitrogen balance depends on other factors than the figure for the diet protein. If adequate carbohydrate is furnished to protect a defective storage and to be fully antiketogenic, it is possible that high-protein feeding may not be necessary, and without this protection from carbohydrate, even an excess of protein may fail to hold the patient in nitrogen balance.

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Fletcher B. Taylor, M.D. (400 Twenty-ninth Street, Oakland).—The careful study here reported will make weight reduction safer and more certain. It is safer to remove fat tissue than to remove protein from an individual. Life and activity depend more immediately upon protein than upon fat. An individual can spare the removal of potential energy of fat more conservatively than the removal of the kinetic material of a muscle or of a gland, composed largely of protein. So protein is given in large amounts to a reducing patient in order to protect his protein working capital. Doctor Koehler finds that even when thus fortified there is some overdraught on the protein structures when fat and carbohydrate are limited.

High protein feeding also has the advantage of increasing the call for calories and thus causing a more prompt weight reduction. The feeding of protein is like the giving of thyroid, and for the same reason. Both increase the caloric demand.

Many overweight patients lose weight rapidly at first, but are unable to continue losing on the same regimen. If Doctor Koehler's results are correct, such people have a changed bodily economy, a response to a caloric depression in two ways: (1) They learn to require less, and (2) they learn to assimilate more calories from the food submitted. They may be likened to destitute miners, who decrease their expenses while searching more carefully for small nuggets.

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Doctor Koehler (Closing).—It is true that if we take the basal caloric value as determined by the usual basal metabolic test as the basis of calculating the total twenty-four-hour requirement, the maintenance values thus obtained appear too low. On the other hand, the validity of assuming the standard metabolic rate as the minimum can be questioned. It is well known that during sleep and during periods of especially complete relaxation such as may follow exercise, the metabolic rate may drop below the morning resting and fasting rate. But even with these allowances this paradoxical situation is difficult to explain. If I inadvertently give rise to the supposition that the problem is solved, may I emphatically say that this is not the case. On the fundamental problem, as to why it takes 3,000 calories to maintain the weight of one individual and 1,500 for another under apparently comparable conditions, we have little information. Similarly, we know nothing of the mechanism by means of which the body institutes a neconomy program to lower the maintenance requirement to meet a reduced intake. On the other hand, these are tremendously important problems.

CRANIOCEREBRAL INJURIES—THEIR MANAGEMENT*

By Carl Wheeler Rand, M. D.
Los Angeles

Discussion *by Howard C. Naffziger, M. D., San Francisco; Samuel D. Ingham, M. D., Los Angeles; Cyril B. Courville, M. D., Los Angeles.*

If one were to sum up, in a single word, the most important attitude of the physician in handling craniocerebral injuries, "watchfulness" would perhaps be most appropriate. Recently there has been on foot a tendency to form outlines for standardization in the treatment of head injuries. Such efforts are commendable, and in the bye and large are beneficial, for they bring out the general principles involved. They are, however, necessarily rather inelastic and cannot be expected to meet all the varied conditions which present themselves in a series of craniocerebral injuries. It would be impossible, for example, to make a comprehensive outline for the treatment of fractures of the long bones, of pneumonia or of any other serious illness. The handling of complications, which is a very important phase of any disease, would necessarily be inadequately covered. The same applies to the subject in hand, for no two cases of craniocerebral injury are alike.

SHOCK

Every case of head injury is accompanied by a certain degree of shock. Naturally, the first treatment should be directed toward this condition. Unnecessary handling and fast transportation should be avoided. Body temperature should be maintained, and not infrequently stimulation and fluids given early. This period may last from a few minutes to several days. It is usually over, however, within the first few hours.

The great majority of head injuries present the problem of treating cerebral edema. This is a rapid process which, under certain circumstances, may reach its height within a period of two hours, or may be much slower in development. It is largely a matter of fluid balance in the cerebral tissues. The use of external applications of ice to

* Read before the General Surgery Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

the head is an ancient custom which probably has considerable merit. As often used, however, it cannot be very efficacious. The application of a single ice cap on the crown of the head, as is customary, does not provide much cooling effect. If used, several ice bags should be employed, enough, in fact, to encase the head in a cool chamber. If this is done, it not only gives comfort to the patient, but serves to a greater degree to lessen hyperemic effects intracranially. On the other hand, certain patients will not tolerate ice, and it is better not to employ it at all than to keep up a continual struggle in forcing the patient to keep it on.

IMPORTANCE OF REST

There is no question but that rest is the most important single factor in treatment. This does not necessarily imply restraint in a patient who is inclined to move about. In cases of contusion, the patient tends to lie curled up on his side, not infrequently turning from one side to the other. This is less objectionable than the use of strong sedatives or of mechanical restraint. It is realized that in certain such cases restraint cannot be avoided. However, it often increases restlessness. If restraint is employed, it should include both upper and lower extremities. If the upper extremities are alone restrained and the legs left free, the patient may injure one or both brachial plexuses by struggling.

MORPHIN

Much has been said both pro and con for the use of morphin. There is little doubt but that, in the general handling of cases of head injury, morphin is used far too much. Restlessness is said by some to be a forerunner of oncoming coma. To quiet a restless patient with morphin, is to mask the picture and make it impossible for a certain period of time to know whether the following quiet is due to the drug or due to increasing intracranial pressure. Again morphin contracts the pupils, and takes away any localizing value which a dilated pupil may have. In the third place, morphin is a respiratory depressant, and in cases where the respiratory center may already be embarrassed by edema or hemorrhage, the use of morphin is an added danger. In handling a large series of cases it is seldom that morphin has been used, but when necessary it has usually been given in doses of grains one-eighth to one-sixth, rather than grains one-quarter. On occasion codein may be indicated. More frequently the patient can be adequately controlled with sodium luminal, chloral or allied drugs.

HYPERTONIC SOLUTIONS

During the past decade the use of hypertonic solutions, especially glucose, has become almost universal in treating cerebral edema. It is argued by some that this is contra-indicated, not so much from the fact that it does not dehydrate as from the fact that the decreased brain volume thus brought about may lower pressure enough to cause secondary intracranial hemorrhage, which would not otherwise occur. It is also argued that while there may be a primary dehydration effect, this may be followed by a secondary phase of increased edema. The food value of the sugar is apparently unchallenged. Again one comes back to the question of fluid balance. I believe that the use of glucose has saved many lives. It cannot, however, be given at certain stated intervals or in certain stated amounts. Each case demands individual treatment. While 50 c.c. of 50 per cent glucose intravenously is most often used, we have given it to as high as 150 c.c. of 50 per cent, or as low as 10 to 20 c.c. of 50 per cent in children. On occasion, hypertonic solutions varying from 5 to 10 per cent with larger volume of fluid, have been used. Whatever physiological arguments can be brought forth for or against its use, I am convinced that, since its employment, the necessity for decompressive operations has been greatly reduced. It apparently is not necessary to closely watch the percentage of blood sugar or sugar in the urine which may follow the use of glucose. Formerly we used insulin to control hyperglycemia or glycosuria, and tried to keep close watch on these conditions. In the majority of cases there will be an overflow of sugar in the urine, which promptly clears up when the glucose is discontinued. Caffeine sodium benzoate has been said to have some property of lowering intracranial pressure or tension. We have used it in certain cases where a stimulant seemed indicated. When used, it should be for a relatively short time; the amount of each dose being prescribed by the physician rather than left as a p. r. n. order.

LIMITATION OF FLUIDS

Limitation of fluids is essential for a considerable period even after the symptoms of acute edema have subsided. Prolonged rest is also essential, until such a time when the patient can be up and about without causing headache. This symptom, when persisting, apparently indicates that vasomotor instability of the cerebral vessels still exists.

WITHDRAWAL OF CEREBROSPINAL FLUID

There are two schools in regard to the withdrawal of cerebrospinal fluid. By some we are told that lumbar punctures should never be carried out, by others that they should be employed in every case. I feel that there are many cases where lumbar puncture is not necessary nor indicated. The measurement of spinal fluid pressure, however, is probably our best index of the degree of intracranial pressure present. Where lumbar punctures are observed for a number of days, the manometer readings become lower as the cerebral edema decreases. It is seldom that a bed patient will continue to have headaches if the spinal fluid pressure has dropped to normal. By lumbar puncture one not only gets an accurate conception of the general pressure situation, but he learns whether or not the fluid is clear or bloody; and if cloudy, whether it contains living organisms. Lumbar puncture, when performed, should be done carefully, the fluid removed slowly and the patient's condition watched critically during this

procedure. If undue struggling on the part of the patient takes place, it is doubtful if the puncture should be persisted in. It is seldom that we do a decompression for cerebral edema without first ascertaining the pressure and character of the spinal fluid.

OTHER AIDS

In every case close attention should be given to the pulse rate, type and character of respirations and blood pressure readings. Time will not be taken to discuss the importance of these measures. Everyone knows the significance of a slow pulse, the danger of a fast one; the significance of a gradually increasing blood pressure, with a corresponding increase in pulse pressure and the catastrophe which usually happens when this breaks; also the comfort which easy, regular respirations give the physician in contrast to the apprehension incited by Cheyne-Stokes breathing.

Again and again the simple treatment of a bleeding ear by loosely packing with sterile cotton has been emphasized. In spite of this fact, only too frequently one still sees the use of irrigating solution or moist antiseptics, being placed in the canal. If given an opportunity, nature will in a short time wall off the ruptured eardrum by a clot which acts as a barrier to the invasion of microbes. Inspection of the drum is seldom necessary and probably carries some hazard of infection.

Hyperthermic states are probably best combated by the liberal use of ice bags applied over the great vessels. Usually six, one over each corresponding carotid, one over each axillary, and one over each femoral artery are used. An ice water enema may be helpful. Such applications of ice are usually ordered for patients suffering with a temperature of 102 degrees or more, being discontinued when the temperature has dropped to the neighborhood of 100 degrees. We have found that hyperthermia can be more successfully overcome in young individuals than in older people.

ROENTGEN STUDIES

The necessity for roentgenographic studies is emphasized. Not that the physician is concerned with any direct brain damage from a fissured fracture, but without good stereoscopic plates one cannot always be sure that some degree of depression has not occurred. Again it is of importance to know if a linear fracture has crossed a meningeal groove, as epidural or subdural hemorrhage may result if this is the case. A certain medicolegal aspect has sprung up during the last few years, so that it is almost incumbent upon the physician, from this standpoint alone, to make roentgen studies of the skull in head injuries. These pictures, however, should not be taken while the patient is in profound shock, or if he is so restless that satisfactory plates cannot be made. There is almost always a time when such pictures can be secured. Unfortunately, the presence of a skull fracture in roentgenographic films carries greater importance with the juryman than it should.

DEPRESSED FRACTURES

It would seem that the treatment of depressed fractures should cause little dissension. So far as I know, there is no dissension if these fractures are compound and bone fragments be indriven. Such conditions should be remedied as soon as is consistent with safety, preferably saving all fragments which can be used to fill in the defect. Indriven bone fragments, if left, are a potential cause, not only of subsequent brain abscesses, but of convulsions. It is the simple type of depressed skull fracture regarding which a divergence of opinion has occurred. As has been shown experimentally, the presence of gliosis is probably due to the shock of the blow rather than to the actual depression of the bone. However, one can never be entirely sure that the dura has not been torn by a fragment of bone unless the field is actually inspected. Roentgen ray findings are often misleading in this regard. Not infrequently we have found laceration of the dura, or even of the cortex, in cases where the Roentgen ray gave no suggestion that such a condition existed. The cosmetic aspect of the situation cannot be entirely overlooked, especially if the depression be in the frontal region. Children seldom worry about depressed skull fractures, adults frequently do, and the problem must be looked at from this psychological standpoint. It is believed that the frequency of posttraumatic epilepsy will be lessened if the depressed area is corrected soon after the injury. A physician is seldom faced with a more humiliating situation than to have a patient return with convulsions some years after the occurrence of a depressed fracture, which he had felt unnecessary to correct at the time.

Three types of intracranial hemorrhage are to be considered in every case of head injury. Extradural hemorrhage, as is well known, is frequently seen in so-called free interval cases. Here watchfulness is of the greatest importance, as the free interval may show wide variation in length of time. Fulminating cases have practically no, or a very short free interval, while in cases of slow seepage the interval may go over a period of days or weeks. We have observed that the headache is usually greatest on the side of the hemorrhage, due, we believe, to stripping of the dura from the skull. Dilatation of the pupil is usually seen on the same side as the hemorrhage. Such cases demand operation, removal of the clot and stoppage of the bleeding point. A word of caution may not be amiss. It is not good judgment to try to remove all of the clot adhering to the dura. In so doing, the operator may start fresh hemorrhage which is almost impossible to stop. If large enough to give localizing symptoms, subdural and subcortical hemorrhages should, in our opinion, be explored. Most subdural hemorrhage is secondary to subarachnoid bleeding. This is not necessarily the case. Subcortical hemorrhages, if evacuated early, may materially shorten the time of convalescence and increase the degree of returning normal function.

INTRACRANIAL BLEEDING

In cases of generalized intracranial bleeding, repeated lumbar punctures may be beneficial for lowering the pressure. It has recently been shown that repeated punctures have little value for mechanically removing the free blood. It is also felt that on occasion they may tend to lessen the likelihood of subsequent adhesion formation. We have seen two cases where the aqueduct of Sylvius became blocked as a result of an organized clot in this structure. Other instances could be cited where adhesions about the cisterna magnum have similarly resulted. If it be true that cerebral birth hemorrhages can be helped by repeated lumbar puncture, the same principle would seem to apply in this class of cases. We are not unmindful that lumbar puncture is considered as harmful by many, and that it is given as a probable cause of increasing the bleeding. Much depends upon the care with which the puncture is made, and the slowness with which the fluid is allowed to escape. Rapid lowering of intracranial pressure by sudden removal of large amounts of spinal fluid is dangerous. It tends to promote further intracranial hemorrhage and is to be condemned.

COMPLICATIONS

A few less frequent complications should be mentioned. Meningitis is most often caused by a basal fracture with communication through the ruptured eardrum, sphenoidal or frontal sinuses, or the cribriform plate. Irrigating a bleeding ear predisposes to cause rather than to prevent meningitis. Rarely such a case can be cured by repeated lumbar puncture or continuous drainage. Brain abscesses are most common after infected compound fractures with indriven bone fragments. Other missiles, such as bullets, are less apt to cause abscesses. When present, they should be treated the same as brain abscesses from other causes.

During the past decade chronic subdural hematoma has been recognized more frequently. This condition may develop, particularly after a minor head injury; in fact it seems more common after minor injuries. The period of time for its development varies greatly, from a few weeks to several months. It is difficult to diagnose, especially the side affected. It should not be forgotten that subdural hematomas may be bilateral. Ventriculography on occasion is of value. When present, the condition may be treated in one of several ways: either wide exploration and removal of the membranes, decompression with partial removal of the membrane and irrigation, or simple multiple trephining with washing out of the clots. All of these methods have been employed by the writer on various occasions with equally good results.

Traumatic areocele or pneumatocele is not infrequent. It usually accompanies fractures which have involved the frontal sinuses, although it may follow fractures of other accessory sinuses. The air is most frequently found pocketed in the substance of the frontal lobe and may, or may not, communicate with the ventricles. Cerebrospinal rhinorrhea is almost always present at first. Expectant treatment is justifiable in certain of these cases, the patient being cautioned against sneezing, coughing, straining at stool or anything which may raise the pressure in his accessory sinuses. About a third of the cases may recover spontaneously following this method of treatment. Other cases will require surgical evacuation of the air and closure of the fistulous tract. They demand very close watching, and the patient's condition otherwise permitting, they should be operated even in the presence of meningitis. We have seen one case where the ventricle was filled with air coming from the mastoid cells and traversing the base of a bruised temporal lobe.

Arteriovenous aneurysms infrequently occur. They are usually diagnosed by the presence of pulsating exophthalmos and a bruit. Ligation of the common or internal carotid has been the choice in treatment. Recently the implantation of a free muscle graft into the internal carotid has been advocated and employed. This graft, because of altered pressure conditions at the fistulous opening, is said to become lodged in the opening thus blocking it. I have seen one case where this was done successfully. Several have been reported. While ingenious, it cannot be infallible, and one would almost wish that he had a string tied to the muscle graft so that he could pull it back if it followed the course of the middle cerebral artery rather than blocked the fistulous opening.

POST-TRAUMATIC TREATMENT

Not the least important in the management of craniocerebral injuries is the physician's effort to prevent posttraumatic states. Fortunately these seldom, if ever, occur in children. They are most frequent in cases with an industrial or legal angle. Great tact is necessary on the part of the attending physician. He must have the confidence of his patient, and both create and maintain in him the desire for recovery. The desire to recover must be greater than the desire for gain, if a posttraumatic neurosis is to be avoided. Close coöperation of the insurance carrier and the employer is highly important. These patients may sometimes be led, never driven, toward recovery.

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DISCUSSION

Howard C. Naffziger, M. D. (University of California Medical School, San Francisco).—Doctor Rand, with his wide experience in the management of injuries to the brain, has given a particularly practical and, I believe, sound consideration to methods of treatment. His paper should serve as a highly useful guide for those less familiar with the subject.

In connection with the limitation of fluids, however, a word of caution might be given. So much stress has been laid upon the value of limitation of fluids and dehydration in the treatment of edema of the brain that such therapy is frequently overdone. I feel sure that Doctor Rand would agree that it has become too frequent an experience to see patients who are so dehydrated that their lives are endangered, so that the most important service rendered by the consultant is to urge that fluids be given immediately. Comatose patients often are purged to dehydrate

them, and no fluids are given. It should be recognized that the limitation of fluids to the minimum of body requirement is a quite different matter from deprivation of fluids and dehydration.

I agree with Doctor Rand that the use of glucose solutions is frequently advisable. It is my feeling that their use is attended by less risk of undesirable after-effects than is the case with the use of inorganic salts.

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Samuel D. Ingham, M. D. (727 West Seventh Street, Los Angeles).—At the end of his paper, Doctor Rand states: "Not the least important in the management of craniocerebral injuries is the physician's effort to prevent posttraumatic states." The problem of the posttraumatic state is often very difficult, both as regards diagnosis and treatment. As regards the diagnosis, it is often impossible to draw the line between the symptoms and complaints which develop on a psychoneurotic basis, and those due to organic changes in the brain. Head injuries in common with injuries in all other parts of the body are prone to be complicated by what has been called compensation neurosis. It is also well recognized that head injuries are frequently followed by a train of symptoms which involve subjective complaints, changes in the personality, and complete disability in the absence of any discoverable objective signs of gross or focal injury of the brain, and which cannot be explained on the basis of psychoneurosis. This syndrome occurs most frequently after injuries which cause the more severe concussions, and the manifestations are more or less proportionate to the age of the patient. They are also more or less proportionate to the period of unconsciousness and confused mentality immediately following the injury. The prominent symptoms of this syndrome include: Constant headache, frequent dizziness, fatigability, imbalance of cardiovascular and vasomotor functions, incapacity for sustained mental effort, emotional instability, irritability and narrowing of the field of interests, outbreaks of temper, somnambulistic episodes, and occasionally fainting or convulsive attacks. Vestibular tests often show abnormal responses, and encephalograms sometimes demonstrate cortical changes.

This clinical picture can be to some extent correlated with what is known of the pathology of cerebral traumatism, which includes not only macroscopic hemorrhage and areas of softening, but diffusely located microscopic areas of necrosis and cellular changes within the brain. The management of the psychoneurotic symptoms following head injury is, in general, similar to that of psychoneurosis from other injuries, and may be included in the general term psychotherapy. For the postconcussional syndrome treatment is largely symptomatic, with special attention to the creation of a protected environment and simple occupation within the capacity of the patient. Many cases have been reported in which benefit has occurred from the injection of air into the spinal canal after removal of the spinal fluid.

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Cyril B. Courville, M. D. (1100 Mission Road, Los Angeles). — Intelligent, effective treatment in any given condition must of necessity be based upon a knowledge of the alterations in structure and functions provoked by the pathologic process. From a therapeutic standpoint, therefore, lesions of the intracranial tissues resulting from injuries to the head may be divided into two groups: *static* lesions, which are the immediate result of the injury and are of their greatest magnitude after the actual moment of the injuring force, and *kinetic* lesions, which are progressive, the result of processes only initiated by the injury. In the first group may be listed the gross contusions and lacerations of the brain. In a modified sense, the immediate effect of the injury of the nerve cell, as manifested by unconsciousness, should also be considered in this connection. It is obvious that, if not interfered with, nature will do its best to repair the damage in this group of lesions, and there is, therefore, no specific program of therapy to be considered. The physician's attention, then, should be directed to the recognition of the group of progressive lesions and their prevention, control or treatment.

This second group of conditions includes both common and rare lesions. The more common and, therefore, more important ones are cerebral edema and meningeal (particularly dural) hemorrhage. The present-day conceptions of the proper treatment of cerebral edema have been amply discussed in Doctor Rand's paper. Certain pertinent facts regarding increased intracranial pressure and cerebral edema should be kept in mind. In the first place, intracranial pressure is not necessarily increased as the result of injury, and in fact may actually be decreased. In such cases dehydration treatment is obviously not indicated. When actually found to be present, as indicated by the spinal manometer, increased intracranial pressure may be the result of free fluid in the subarachnoid and ventricular spaces, as well as fluid bound up within the tissues of the brain—true cerebral edema. When due to free fluid, the most simple method of control is by withdrawing suitable amounts of cerebrospinal fluid from the system of lumbar puncture. It is, furthermore, important to know that two varieties of true cerebral edema may exist and even coexist. It may be generalized, involving the cerebellum and brain stem as well as the cerebrum. It is also invariably present in a more marked degree about local contusions and hemorrhages. Local edema is much more difficult to control, and is largely responsible for the fatal issue in such cases. Dehydration treatment, if ever of life-saving value, should be utilized to its greatest extent in these instances. It may be said, finally, that coma, while not due to edema but, rather, to the direct effect of injury on the nerve cell, may be considerably prolonged by the presence of increased fluid within the intracranial space.

Intracranial hemorrhages form the second important group of progressive lesions. Bleeding may occur either without or within the dural envelope, in the subarachnoid space or within the brain tissue or in the ventricles. From an operative standpoint, extradural and subdural hemorrhage resulting from injuries to the meningeal arteries or their accompanying veins are the most important lesions of this subgroup. Observations on a series of autopsied cases have led me to believe that more patients are operated upon for presumed "interval hemorrhages," but who do not have them, than there are individuals who actually die of them for want of operation. This suggests that surgeons, particularly those with neurologic inclinations, are on the alert for such eventualities, but that some difficulty is still experienced in distinguishing them from other lesions which give rise to similar clinical pictures. In personally studied cases, gross cerebral contusion, intracerebral hemorrhage, cerebral softening and subdural fluid accumulations have been found to simulate, more or less closely, the syndrome of "interval hemorrhage." In doubtful cases, after critical analysis of the situation, it is fully agreed that exploratory operation is warranted. It must be remembered, however, that ill advised or unskilled operations may hasten the patient's demise or even cause it.

Hemorrhages from dural vessels are not always manifested in the typical way by an interval of lucidity of twenty-four to forty-eight hours. If the injured vessel is hypoplastic, as in cases of status thymicolymphaticus, death may occur within a few hours of an injury. If, on the other hand, the accompanying veins, rather than the artery, have been injured, the lucid interval may be days or even weeks in duration.

The value of Doctor Rand's article lies, in no small degree, in the fact that it is a reflection of many years' experience. Those who have to deal with the problem of craniocerebral injury in a practical way, particularly those who see only the occasional case, will do well to give careful attention to the points which have been emphasized.

COMPULSORY HEALTH INSURANCE*

By Frederick L. Hoffman, LL.D.
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VII

IT is not an easy matter to grasp the full import of present-day propaganda for the adoption of compulsory health insurance for certain selected groups of the American population. The Committee on the Costs of Medical Care has come forward with a veritable mountain of books and pamphlets picturing the present medical situation in this country as deplorable, and estimating its cost at about three and a half billion dollars per annum, which is about $30 per capita. This is guesswork opinion resting upon a slender foundation of facts. The Committee bases most of its essential conclusions on the ascertained cost of medical care in nine thousand families, which, applied to the more than twenty-five million families in the country, yields the figures just given. The facts require only to be stated to establish the inadequacy of the study, and emphasizes the fallacy of the far-reaching conclusions advanced with confidence of their being accepted by the medical profession.

THE WAY OF SOCIAL REFORMERS

Social reformers naturally desire an extension of the activities of the State into any and every field of private enterprise excepting their own. They do not hesitate to advocate the most reckless of social experiments from prohibition to social insurance, with the element of compulsion invariably in the background. If the experiment proves a failure, the consequences of such failure do not fall upon the promoter but upon the helpless victims and the taxpayers. Hence the American Medical Association, in clear recognition of its responsibility, has constantly opposed the adoption of the principle of health insurance, and in support of its policy has marshaled a vast amount of incontrovertible evidence collected by its Bureau of Medical Economics. There is little need of more information, but the most urgent need of mental concentration and experienced judgment upon the facts accessible. The facts are accessible to anyone who desires to learn the truth of the situation as it exists in countries in which social insurance has been the law of the land.

CASH BENEFITS AND MEDICAL TREATMENT

Most of the proposals made in this country would divorce cash benefits from medical treatment. But this would at once alienate the support of the labor party, which is much more interested in adequate financial support during sickness than in the best medical treatment of the patient. As far as I know, no country has as yet adopted a system of social insurance without providing cash benefits to the insured during illness. To the insured the question of financial support is the most essential; for if adequate he can, if need arises, pay for his own physician, as is frequently the case. Cash benefits, however, cannot be paid without a medical certificate of incapacity for work, and in this lies the source of most of the difficulties that have arisen, and are bound to arise under any system, however carefully supervised.

ENGLAND'S REGIONAL MEDICAL STAFF

To protect the interests of the State, the Approved Societies and all others, the British system was amplified by the establishment of a Regional Medical Staff, concerning which a recent memorandum by the Ministry of Health was made public in *The National Insurance Gazette* of June 21, 1934, reading in part as follows:

"The functions of the Regional Medical Staff include:

(*a*) Examining insured persons who are referred to them by Approved Societies, insurance committees, or insurance practitioners, in accordance with conditions, on which societies, committees, and practitioners are from time to time informed, and advising (1) as to incapacity for work (incapacity references) or (2) in cases of admitted incapacity, on questions of diagnosis and treatment with a view to restoration of working capacity (consultation references). The conditions on which references are accepted from insurance practitioners are stated in subsequent paragraphs.

(*b*) Discharging duties in connection with the administration of the Insurance Medical Service, including the inspection of medical records, investigation of questions of prescribing, and of certification of incapacity for work, and other duties arising under the medical benefit regulations.

(*c*) Carrying out inquiries on behalf of the Ministry which can most conveniently be made by a medical staff organized on a territorial basis; these include work undertaken by the Ministry on behalf of other government departments—in particular, inspections and inquiries made on behalf of the Home Office in connection with the administration of the Dangerous Drugs Acts."

AN EXAMPLE OF BUREAUCRATIC CONTROL

The functions of the Regional Medical Staff is one of the illustrations of the bureaucratic measures found essential for the successful administration of health insurance. In the event of an insured person being referred by an Approved Society or Insurance Committee to a Regional medical officer, a form for consultation references is at once sent to the practitioner, as well as a form for incapacity references, requesting information

"as to the medical history and present condition, and the fitness of the insured person to attend at a center for examination. The practitioner is required by the Terms of Service to furnish this information, which is essential for the proper discharge of their duties by the medical officers, both in order that the officer who examines the patient may be in possession of such facts as the practitioner's knowledge of the case enables him to supply, and also in order that alternative arrangements may be made, when necessary, for examining those patients who are unable to travel to examination centers. If facts are thus brought to notice which might, it is considered, modify the Society's view as to the necessity of examination of their member, the Society will be so informed, and further action postponed pending their consideration of this information."

The Terms of Service of insurance practitioners (panel doctors) provide that the information just referred to shall be furnished by the practitioner

* One of a series of articles on compulsory sickness insurance written for California and Western Medicine by the well-known consulting statistician, Frederick L. Hoffman, LL.D. Articles in this series were printed in previous issues as follows: I, in April, page 245; II, in May, page 361; III, in June, page 411; IV, in July, page 33; V, in August, page 114; VI, in September, page 177.

within the time specified by the medical officer, concerning which it is said,

"This provision was inserted in the Terms of Service, with the concurrence of the Insurance Acts Committee, on the understanding that the time so specified should not be less than forty-eight hours from the time when, in the ordinary course of post, the notice would be received by the practitioner to the time when it would similarly be received at the office of the medical officer. Where, in exceptional cases, it is asked that the information should be furnished in a shorter time, it is made clear on the Form of Notice that this is a matter of request only, and not a requirement.

"Experience has shown the great importance of the return, by practitioners, within the time specified, in order that the medical officer may have a reasonable opportunity of considering the information furnished, and of taking such action as is in some cases necessary, before the time fixed for examination. . . . In every case, therefore, Form R. M. 2 should be returned within the time specified, and if it has not been found possible to see the patient again, such information as the practitioner is already in a position to furnish as to the patient's condition when last seen by him will suffice."

I have given the foregoing almost in its entirety to illustrate the complexities bound to develop in the realm of health insurance. The doctor at times is occupied to an incredible extent with formalities, reports, certificates, consultations, examinations, and correspondence, inconceivable on the part of private practitioners in this country. Few, if any, of the studies of social insurance reveal a thorough understanding of the procedure of the insurance committees in different parts of the country. It would require laborious reading and close attention to matters of minor detail for a full understanding of exactly what is going on under compulsory health insurance. The following is an extract from the reports of meetings of the London Insurance Committee, dated May 31, 1934:

"Clerk reported case of irregular certification by practitioner, who issued certificates of incapacity without visiting patient. Committee asked Minister to withhold £5. Clerk reported cases where practitioner refused to visit insured person on his list owing to case being less urgent than others demanding attention. Committee found no failure on part of practitioner to comply with terms of service. Case referred by Medical Benefit S. C. concerning certificates of incapacity issued by practitioner in respect of insured person. Facts of case are as follows: Certificates of incapacity issued by practitioner on March 16 and 20. During afternoon of latter date insured person attended at Police Court and sentenced to term of imprisonment, terminating on April 2. On April 3, insured person visited practitioner and obtained further certificate dated for previous Saturday, March 31. It was clear that certificate given on April 3 was antedated for March 31 and that practitioner certified examination on latter date when she had not done so. Found that practitioner had committed breach of rules and warning was issued. Clerk reported case of inadequate dispensing by chemist. Chemist censured and Minister asked to withhold portion of moneys payable. Clerk reported case of inaccurate dispensing and caution issued to chemists. Clerk reported further case of inaccurate dispensing by chemist. Chemist cautioned."

RESTRAINTS UPON PHARMACEUTICAL PRACTICE

I add the following to illustrate the difficulties in pharmaceutical practice:

"Prescriptions disallowed: Arm slings 3, bandages 25, bunion or corn pads 4, douches 2, douches (nasal) 14, ear pad 1, elastic hosiery 27, eye shades 88, finger stalls 50, glass funnel 4, hypodermic needles (not insulin) 21, inhalers, sprays, etc., 17, litmus paper 1, pessary 1, syringes 34, thermogene or capsicum wool 78, trusses 6, tubes and rods 39, wrist strap 1, casein powder, charcoal biscuits, disinfecting fluid, Energen bread, fumigating cones, iodized salt, Kellog's bran, liquid peptonoids, marmite, ovaltine, peptonizing powders, roboleine, saccharine tablets, sanatogen, sugar of milk, virol."

In amplification of the foregoing, I give the following extract from the reports of meetings of the Insurance Committee of Glasgow, April 18, 1934, having reference to the Medical Benefit Special Committee:

"Medical Benefit S. C. reported that six claims for anesthetists' fees and two fees for emergency treatment were certified for payment. Following were reported to be without scope of service: Ophthalmoscopic examination, correction of error in refraction. Clerk reported that, consequent on decision of a tribunal in England that an arch-support is an appliance which may be ordered as coming within the scope of medical benefit, he had received several applications from insured persons for foot arch-supports on the instructions of their respective Approved Societies. Up to the present, foot arch-supports have not been recognized in Scotland as coming within definition of a splint, and he had, therefore, written to the Department of Health requesting them to give a definite ruling as to whether a foot arch-support is an appliance which may be ordered for insured persons as part of medical benefit. S. C. agreed to defer consideration until a reply is received from Department of Health."

OTHER DEDUCTIONS MADE AGAINST PANEL PHYSICIANS

I also give an extract from the proceedings of the Insurance Committee at West Ham, April 9, 1934, according to which

"Executive and Finance S. C. recommended (*a*) cost of eyeshade ordered by doctor; (*b*) cost of two arch-supports ('Soxos') ordered by insurance doctor for insured person be paid by committee as a proper charge against Medical Benefit funds; (*c*) decision of Panel Committee to dismiss appeal of a doctor against surcharge of cost of an eyeshade be supported. S. C. reported that they had further considered resolution received from Panel Committee: 'The Panel Committee views with concern the increasing number of practitioners who are not living within a reasonable distance of their practice, and considers that when no resident partner or assistant is available, a deduction of 5 per cent should be made in the practitioner's remuneration,' and having discussed distance to be regarded as reasonable for purposes of this proposal, they recommend that resolution be adopted."

There are thousands of these reports which reveal the true practice under health insurance, and the clerical status of the doctor who must needs be subservient to comply with the stream of requests for information or explanations, as the case may be, involving at all times the risk of a reduction in compensation and, in extreme cases, dismissal from the panel. If American physicians are seriously interested in health insurance as conducted in Great Britain, they should obtain a full set of the reports of insurance procedure, and study them at leisure to develop a true understanding of what is really involved in any and all proposals to establish public health insurance in this country.

THE LURE OF MEDICAL HISTORY*

THE TUBERCULOSIS MOVEMENT IN CALIFORNIA†

By W. P. Shepard, M. D.
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III‡

CONTROL OF CONTACTS

YET one other liability must be listed in which we should like to depend more than we do upon the practicing physician. This is the matter of a proper hygienic regimen for child contacts. It is now a well-established fact that the majority of our new cases of tuberculosis will occur among those who, as children, were subjected to somewhat prolonged contact with the disease. It has been shown by Myers and others that, if careful search is made, usually within the family, by the attending physician who first sees a case of early childhood tuberculosis, the source can frequently be found. Furthermore, when an adult member of the family group develops active tuberculosis it is of the utmost importance for the attending physician to give careful and continuous attention to the child members of that patient's family. So often has this been left to the public agency, either the health department or the local tuberculosis association clinic, that only recently have physicians realized the opportunities they are missing. Contacts with tuberculosis within the family are the legitimate and proper concern of the attending physician. Contacts outside the family are the proper concern of the local health department until they are located and placed, preferably, under private medical care. Only when private medical care is not available, due to economic or other circumstances, does the health department feel the necessity of taking these contacts to a public clinic.

From the health officer's standpoint, no occurrence is more tragic than for a known child contact to develop tuberculosis in the absence of medical advice as to how it might have been prevented. If tuberculosis develops in the child in spite of the best medical advice and guidance, then at least we have done the best we could.

To be sure, this whole problem is complicated by our present unsatisfactory distribution of medical care. The health officer, the clinic nurse, the bedside nurse, and the tuberculosis worker are constantly faced with the difficult problem of persuading people that they need medical care, and that they must find means to pay for it. Expenditure from a limited income for medical care of a child or adult who *appears* to be well is one of the hardest things, apparently, for human nature to contemplate. In fact, it takes a rather high degree of self-restraint or faith in the medical adviser for the average person to deny himself comforts and pleasures even to the point of luxury in order to purchase medical care which he does not think he needs. The enormity of this task is seldom appreciated even by the physician who, after all, sees only those who have been willing to come to his office and who presumably intend to pay their bills. The great number who have not been willing to do this he rarely sees except, perhaps, in free clinics. It is not surprising, therefore, that in some localities health departments and health agencies have found it easier to organize diagnostic and treatment clinics in order to prevent the constantly recurring tragedy of unnecessary illness and death. Perhaps they have become a little careless at times concerning the financial status of the people admitted to these clinics. The solution lies in tolerance, one with the other. When public health workers share the physician's viewpoint, and can in turn impart their viewpoint to the physician, then we shall quickly find that there are no points of difference between us.

Tuberculosis Clinics—More or Fewer? — The Bureau of Tuberculosis of the California State Board of Health reports that by far the largest number of persons ever in attendance at clinics are now receiving treatment at public expense. It is estimated that there are in the neighborhood of fifty thousand persons, including contacts, in more or less regular attendance at clinics in this state. Many of these clinics are understaffed as to physicians and nurses; many are without proper standards and proper equipment, even for diagnosis; many are unable to conduct an adequate follow-up into the patients' homes; and in many places it is utterly impossible to present the tuberculosis problem of that locality to the local school and industry. Many patients are obliged to wait hours for examination, and then not receive it. Certainly, if tuberculosis is to be prevented and our death rate in this state lowered, this is not the best way to do it.

The situation might at least be improved if those in charge of clinics would bear in mind that many local physicians are interested in the antituberculosis activities of their community. Whether compensated or not, they are glad to assume the responsibility for follow-up of both patients and contacts, to interpret clinic findings to the patient, and to supplement these findings with periodic check-ups of their own. Thus, the understaffed clinic may, in many cases, add a considerable number of skilled volunteer workers to its staff by utilizing medical interest which already exists.

TRIBUTE OR DEFENSE

A common tendency in all tuberculosis work is to become so involved in the problems of treatment of the case that we neglect preventive measures of known effectiveness. In fact, it would almost seem in some localities that the motto of

* A Twenty-Five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of California and Western Medicine. The column is one of the regular features of the Miscellany Department of California and Western Medicine, and its page number will be found in the front cover index.

† From the division of the Pacific Coast Welfare Division, Metropolitan Life Insurance Company, San Francisco.

Presented at the annual meeting of the California Tuberculosis Association at Fresno, April 6, 1934.

‡ Part I of this paper was printed in the August issue, California and Western Medicine, page 118; Part II in September, page 180.

Fig. 1.—Design of the Christmas Seal Stamp printed by the California Association for the Study and Prevention of Tuberculosis in the year 1909. It was in red and green, the design being built on the seal of the City of Los Angeles. (Reprinted from the September, 1909, "Bulletin of the California Association." Courtesy of the Barlow Medical Library.)

tuberculosis associations is "Millions for tribute, but not one cent for defense." With the physician well compensated for his services, with competent medical care within the financial reach of all, with the newer methods of detecting the early case of tuberculosis, such as tuberculin testing, portable x-rays, paper films, using the fluoroscope for a screening device, it should become increasingly possible for us to crush the life from this tuberculosis adder and leave it extinct for all time.

SHORTCOMINGS OF HEALTH EDUCATION

Finally, among our liabilities we must face the fact that our past methods of health education, both among adults and in the public schools, have been none too effective. They are far from useless, as evidenced by the fact that at least today we take advantage of the child's presence in school to attempt to interest him in health and personal hygiene. Another evidence that our health education methods are of some use is the diminishing quantity of sputum on our streets and in our public buildings, as compared with twenty-five years ago. Nevertheless, in all frankness, we must admit that there is evidence that we have annoyed many of our desired converts with our preachments on something in which they are not interested; that we have talked over the heads of many of the lay public, and even hygiene teachers, and perhaps even public health nurses; that our careful and painstaking and time-consuming scientific researches have been misunderstood by our would-be supporters as extreme conservatism; that, as scientists, we have spent much more time in ascertaining scientific truths than in explaining those truths to the general public once they are established; that even in this progressive state, a pioneer in its formation of a state health department, we have not influenced legislation sufficiently to bring about adequate appropriations to the State Board of Health as compared with other states. These and many others constitute our liabilities under the classification of health education. They outline for us a definite future course in this field.

We must learn how to instruct properly those people who are not interested in health, and to engender in them a receptive attitude toward health messages. We, as medical men, must learn either to speak plainly and simply to our public, or must teach others to do this for us. We must teach our assistants and the public to be patient with the painstaking and inexorable exactness of the scientific method. We must emphasize the importance of "Millions, if need be, for defense, but not one cent for tribute." We must gradually impress our legislators with the fact that there is a large and influential public health vote in this state variously estimated from 100,000 to 250,000, which will be cast one way or the other according to the candidate's stand on public health matters. We must discover some better means of providing adequate medical care for the entire population regardless of financial status in a manner that will be just and equitable and encouraging to the physician, as well as reasonable, satisfactory, economical, and fair to the public. This is a problem affecting public health equally with organized medicine, and it is one in which we must all work together.

III. IN CONCLUSION

I have purposely dwelt at more length upon our liabilities than upon our assets, believing that such a discussion might serve a more useful purpose. There can, however, be no doubt that this antituberculosis institution of ours is liquid and solvent in this year of 1934. With that happy adaptability to changing conditions which the antituberculosis movement has always shown, we can look forward with certainty toward turning many of our present liabilities into assets. A cause that is in the right cannot fail to survive and prosper. Today, as in the day of our forefathers, no cause is more right than the control of a disease which is largely preventable, and which consequently falls into the cause of public health.

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CLINICAL NOTES AND CASE REPORTS

PRESERVING BACTERIOLOGICAL SMEARS

By H. H. Parsons, M. D.
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ONE occasionally wishes to preserve for reference a particularly good slide, and as coverslips are not entirely satisfactory (or, as James says, "They are an unmitigated nuisance") I have for some time used the following method; and because I have not seen this described before, I am passing it on.

The slide to be preserved is made as usual and then dried; and when perfectly dry, a 50 per cent solution of water-glass, sodium silicate, which is very alkaline in reaction, is poured over the smear, spread evenly with a match stick, and the excess is allowed to run off at the end of the slide. The slide is then placed in a horizontal position and allowed to dry.

The sodium silicate hardens into a glass which becomes intimately connected to the slide, thus hermetically sealing in the smear.

Unless, however, the water-glass is evenly spread an astigmatic surface will result; but this is largely overcome when the oil immersion lens is used.

128 Neal Street.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

MASKED HYPERTHYROIDISM IN ELDERLY INDIVIDUALS, A FREQUENTLY OVERLOOKED CONDITION

SYMPTOMS

R. Manning Clarke, M. D. (1219 Hollingsworth Building, Los Angeles.)—The usual case of hyperthyroidism has a well-defined syndrome, is quickly recognized, and may be just as promptly given the correct treatment. This discussion is concerned with the unusual case that often escapes correct diagnosis. It is marked by the fact that some of the cardinal symptoms do not present themselves. When exophthalmus and thyroid tumor do not show, the clinician is often misled, and the disease masquerades as some other entity, like heart or gastro-intestinal disease. Both the internist and the surgeon frequently miss these cases, and they fail of receiving the proper treatment because of the failure of correct diagnosis. This masquerading is especially prone to occur in the elderly patient.

Masked as Heart Disease.—Heart Failure.—Heart failure is a favorite disguise. It is a disease that is now expected frequently in the patient of middle age and beyond. In the absence of exophthalmus and thyroid enlargement, the failing heart is put at rest and given digitalis, and the physician is very much surprised to find that the response is disappointing. The rate is not sufficiently slowed and the patient is still ill. Auricular fibrillation is common in a failing heart, and its failure to be benefited by rest and digitalis is puzzling until the correct diagnosis is reached.

Failure of the rate to slow under rest and digitalis should always make the clinician suspicious. This is especially true if the heart is fibrillating, and still more so if the fibrillation is paroxysmal. Normally, the rate should come down to 60 or 80 under this type of management. If it cannot be reduced to below 100, hyperthyroidism should be suspected. Lugol's solution should then be administered as a therapeutic test, especially so if the basal metabolic test is not available. Under its administration, the patient will greatly improve if thyrotoxicosis is the correct diagnosis. The digitalis should not be discontinued.

It is not so hard for anyone to confuse the failing, fibrillating heart of hyperthyroidism with the failing fibrillating heart of mitral disease, because they both have a murmur and *may* both have a thrill. However, the thrill of mitral disease is always presystolic or diastolic in its timing, whereas the thrill of the hyperthyroid heart is always systolic in time. All sounds are loud and increased in the thyroid heart, and this may cause confusion when the examiner is focusing on the first sound, which is accentuated greatly in the case of the mitral stenosis. The history of the mitral case will show definite rheumatic disease as chorea, tonsillitis; and acute rheumatic fever as another important differentiating point.

Hypertension.—Hypertension is another disguise of the thyroid heart, and is also common in the elderly patient that is not suffering from an overactive thyroid. In this case help is found in the fact that the thyroid case tends more to increase the pulse pressure without raising the systolic pressure so very much. On the contrary, the hypertension case tends to increase the systolic pressure without so much increase in pulse pressure. This is especially true if the hypertension case has some renal background. The masquerade of hyperthyroidism can also parade under the disguise of angina pectoris, but this is not as common as heart failure, fibrillation, and hypertension.

Masked as Gastro-Intestinal Disease.—The well-trained gastro-enterologist has learned to look for both extremes of activity of the thyroid gland in all cases that present themselves with gastro-enterological symptoms, especially if the causal factor seems to be a little hidden and hard to find.

The gastro-intestinal tract is the next most common place, after the heart, for thyrotoxicity to show itself. This is well to remember when you stop to think that the thyroid case in the elderly patient can become very toxic, with no enlargement showing in the gland or exophthalmus presenting.

In this field the cases parade as enteritis, or possibly receive no diagnosis at all that is accurate. They often have short attacks of loose bowel movement, accompanied by emesis. The abdomen is sometimes tender generally, never localizing. There may be no tenderness at all. These cases are very weak and frequently show a rapid loss of weight. It is no wonder that the physician is often misled into thinking of carcinoma, gall-bladder disease, chronic enteritis, parasitosis, etc.

X-ray of the tract will be negative, but carcinoma can usually be ruled out by the fact that the loss of weight is accompanied by loss of appetite, and that meat and fatty foods are especially refused. In the loss of weight from thyrotoxicity the progressive loss goes on in spite of a voracious appetite. This fact alone should arouse one's suspicions and cause the taking of a basal metabolic rate.

Roger R. Morris, Taylor Professor of Medicine, University of Cincinnati, reports cases of hyperthyroidism masked by a normal or subnormal basal metabolic rate. He says in part: "It seems probable that these states are usually the result of a preëxisting stage, in which the basal metabolic rate has been elevated. As Reid ex-

presses it, the disease is 'burned out' so far as the increased oxygen consumption is concerned. The pathological physiology in these cases is obscure, but the relief of symptoms and frequent return of the basal metabolic rate to normal, from subnormal levels, indicate that disturbed function of the thyroid is at fault." He concludes that the basal metabolic rate is helpful when elevated, but should be disregarded in the presence of unmistakable evidence of thyrotoxicity. This is a little more true in the thyrotoxic heart than elsewhere. In view of these findings, the basal metabolic rate, relied upon too dogmatically, can be confusing. History and physical examination still are the prime factors in the practice of medicine, as of old. Taylor's report can be found in the International Clinics for September, 1933.

Symptoms That Help in the Clinical Picture.—The skin is filled with helpfulness in the thyrotoxic case. It is warm and moist. It has a peculiar salmon-pink color, due to pigmentation. These patients are always warmer than the average individual, and sleep with less over them than others in a like temperature. They perspire very freely and easily. The blood vessels of the skin are prominent and distended, while the pulse is bounding.

Even though the tremor is absent in these patients, which is seldom, still the overstimulation of the central nervous system is evidenced by restlessness and the quick, jerky movements of every act.

On physical examination, hyperthyroidism does not progress very far, until a bruit is heard over the thyroid. This is especially true in the exophthalmic case. In addition to this, sugar tolerance is increased and the vital capacity of the lungs is reduced. All of these things are helpful when one is trying to uncover the masked case of overactive thyroid.

Last of all, the response to iodin is most helpful. We are indebted to Plummer for pointing out that the administration of Lugol's solution would greatly improve these cases. It does it by increasing the colloid deposits, which in turn increases the pressure in the gland, which pressure tends to hold the thyroxin from escaping, thus reducing the toxicity of the patient. It is a splendid clinical test when in doubt, to simply put the patient at rest, and administer ten minims of Lugol's solution, three times daily.

Another helpful thing is the failure of the pulse rate to drop during sleep. All neurogenic tachycardias drop in rate with sleep, but the hyperthyroid case continues his toxicity both sleeping and waking, and the rate does not drop. There are many other helpful things to distinguish, but the limit of space in this article does not permit more extensive discussion.

* * *

DIAGNOSIS

Hilmar O. Koefod, M. D. (1421 State Street, Santa Barbara).—In masked hyperthyroidism usually two of the cardinal signs of Graves's disease—exophthalmos and enlarged thyroid—are absent. The symptoms are primarily cardiac.

In diagnosing, probably the most important aid is to try to make an etiological diagnosis in every case presenting cardiac symptoms, and then to bear in mind that a definite, though proportionately small group of cases are due to thyrotoxicosis. The importance of making a correct diagnosis is obvious because, once made, therapy is so strikingly successful.

On account of the absence of exophthalmos and enlarged thyroid, and occasionally the rapid pulse, the diagnosis must be made on so-called secondary signs of hyperthyroidism. As more and more cases are reported, these gradually help to form a clearer picture in our minds. Symptoms as well as physical signs are important. The most common complaint is palpitation. This may be a simple tachycardia, which is more or less constant or comes on at varying intervals. Should this tachycardia be associated with extra systoles and no definite cause be found, thyrotoxicosis should be seriously thought of. If the palpitation consists of tachycardias, of absolute irregularity or of varying duration (paroxysmal fibrillation), thyrotoxicosis must be seriously considered. This applies also to cases of permanent fibrillation with unexplained etiology. It should be borne in mind that anginal pain associated with the onset of palpitation may be due to hyperthyroidism.

On examination the majority of patients are found to be of nervous temperament, with associated quick nervous movements. Often they have lost weight in spite of good appetites. A small group have been described as apathetic and obese. Flushing of the skin, perspiration and an unusual feeling of warmth are often present. A brownish pigmentation, most pronounced at the base of the neck, is frequently found. The importance of premature grayness, sleeplessness and irritable gastro-intestinal tract, have been emphasized by some writers. Most cases present a fine tremor of the hands. The thyroid itself may not be enlarged, but frequently is unusually firm, and on careful palpation may disclose a small nodule.

The heart itself gives the impression of being overactive. It is usually more rapid than normal, and on auscultation sounds much as after moderate exercise. Even if the rate is not rapid, the apex impulse is quick and forcible. The first sound at the apex is loud and short, not prolonged as in hypertension. Often the impression is gained that the heart is larger than x-ray studies show it to be.

The systolic blood pressure is often raised while the diastolic is but little changed. The increased pulse pressure suggests the possibility of thyrotoxicosis. Due allowance must be made for the increase of blood pressure that comes with age.

The basal metabolic rate is usually increased, and when found is of great help in making the diagnosis. Allowance for a slight increase in rate for cases of cardiac failure from other causes must be made. A group of cases with a basal rate below normal, but with other definite signs of hyperthyroidism, have been reported and have responded well to treatment.

Masked hyperthyroidism may be easily confused with mitral stenosis. They may both have an accentuated first sound, a murmur that may be easily thought to be presystolic, and the systolic shock may be suggestive of a thrill. A history of rheumatic fever, an enlarged left auricle on x-ray examination, a definite diastolic murmur at the apex, and a split P-wave in the cardiogram help to make the differentiation. If these are absent, and a number of secondary signs and symptoms mentioned above are present, masked hyperthyroidism is the probable diagnosis.

A very important aid in the diagnosis is the therapeutic: if a case of heart failure with or without fibrillation fails to respond to rest and digitalis, and is improved by 5 to 10 minims of Lugol's solution, three times a day, the diagnosis is clarified.

* * *

PROGNOSIS AND TREATMENT

William Dock, M. D. (Stanford University Hospital, San Francisco).—The great importance of recognizing masked hyperthyroidism lies in the fact that the disorder is curable, and in many cases the speed of disappearance of cardiovascular signs and symptoms is extremely gratifying. Unlike the hyperthyroidism of younger persons, that which produces angina, cardiac failure, or chronic asthenia in the elderly does not fluctuate in intensity rapidly when untreated; and it is not often subject to long spontaneous remissions. Occasional cases, particularly in women with nodular goiter, do get completely well without medical management, or with a little iodin and rest. But in general the prognosis depends entirely on the type of treatment available. When no treatment or inadequate treatment is taken, the general course is downhill, with a slower or faster rate, depending on the amount of degenerative disease, of hypertension, and of physical and emotional stress as well as on the severity of the hyperthyroidism. Not infrequently the condition remains stationary for long periods, and severe intercurrent disorders—urinary tract infections, myocardial infarcts, etc.—may be withstood almost as well as by those free from thyroid disease. Until the thyrotoxic state is terminated, invalidism is more or less marked, and the risk of more serious or even fatal cardiac complications is always great.

When surgical treatment is deemed unsafe or inadequate, continuous administration of iodin (one-half to one cubic centimeter of 5 per cent potassium iodid solution daily) and intensive roentgen treatment over the thyroid gland must be considered as palliatives which, in 20 to 30 per cent of cases, bring about a satisfactory regression of thyroid overactivity within a few months. The removal of as much thyroid gland as possible, by an experienced surgeon, is still the most rapid and successful method of combating hyperthyroidism; and when the patient is prepared and continuously treated with iodin for three months after operation, relapse or continuation of hyperthyroidism occurs in less than 5 per cent of the cases. Postoperative hypothyroidism should be treated with thyroid tablets by mouth; and as this may be needed for years the least troublesome method should be used. Two grain U. S. P. tablets, taken in the morning, either two, four, or seven times a week, as determined by the response of the patient's symptoms, are quite safe, and are just as effective as smaller doses given two or three times daily.

Congestive failure and auricular fibrillation in thyrotoxic patients are treated in the usual way. Digitalis and diuretics are sometimes nearly as effective as in cardiacs without thyroid disease. Although digitalis is always ineffective in slowing the thyroid-driven pace-maker of the heart, it does slow the fibrillating heart in many instances nearly as well as in cases of simple mitral or degenerative heart trouble. Nausea and diarrhea, so common in severe cases, respond fairly well to full doses of phenobarbital, and to dry diet of well-cooked cereals, rice and potatoes. Caprices of appetite are common, and should be humored. Patients unable to hold down a simple and particularly soft or liquid diet, may do well on such articles as salami or graham crackers.

In preparation for operation, or in managing those rare cases unsuited for operation, complete quiet, sedatives, and a high caloric diet are the important features. Iodin produces its maximal effects in seven to twenty days, and dosage (if over 10 milligrams a day) or form of administration seem of little importance. When surgical treatment seems probable, but is not immediately available, iodin should be withheld until just before operation rather than be given early. While some patients respond over and over to iodin, some only do so the first time, and the thyrotoxic state may be nearly as severe a month or six weeks later as it was before starting iodin. In a disease which responds so well to ideal treatment, half-measures, partial operations, inadequate preparation and after-care are almost as tragic and even more inexcusable than failure to make a correct diagnosis.

Gestation and Acute Appendicitis. — The recognition of appendicitis during gestation is comparatively difficult, because its symptoms are readily mistaken for the molimina of pregnancy and it is understandable that only severe cases are observed. This fact induced Fátyol to describe the seven cases that came under his observation. After giving the case histories, he discusses their diagnostic difficulties and particularly their differentiation from inflammations of the uterine adnexa, torsion of the pedicle of cystic tumors, extrauterine pregnancy, pyelitis gravidarum and cholelithiasis. The unfavorable prognosis of appendicitis during pregnancy is due to the fact that perforation is more likely. The treatment should be less conservative than is the case if there is no pregnancy; that is, surgical treatment should be resorted to even if the symptoms are not severe. This applies particularly to the second half of pregnancy, whereas during the first few months the rules of surgery should be followed. The prospects of preserving the gestation are better when surgery is resorted to within the first forty-eight hours after the attack. Early recognition of the appendicitis is of vital importance for mother and fetus.—*Zeitschrift f. Geburtshülfe u. Gynäkologie.*

California and Western Medicine
Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California and Nevada Medical Associations
FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
Telephone Douglas 0062

Address editorial communications to Dr. George H. Kress as per above address; advertising and business communications to the Secretary-Treasurer, Dr. Frederick C. Warnshuis, also at the above address.

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Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

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Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

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Leaflet Regarding Rules of Publication.— California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS*

A CALL TO ARMS—THE NATUROPATHIC AND CHIROPRACTIC INITIATIVES

Why This Caption?—Sensational captions have no great appeal to us, when noted in a medical publication. However, as was stated in one of the old McGuffey primers of our school days, "Circumstances alter cases."

Certainly, in so far as the five thousand members of the California Medical Association are concerned, the remaining days of this month of October of the year 1934, and the first six days of the month of November, will represent only a brief time period of less than thirty days after this issue of CALIFORNIA AND WESTERN MEDICINE reaches its readers; but a short period in which what is done, or is not done, by these five thousand California Medical Association members will be fraught with most serious consequences to their own future, as well as that of those graduates in scientific medicine who will follow on in their places, in the years to come.

* * *

Did You Read the September Articles?—As noted on page 194 of the September issue of your Journal, the Naturopathic Group will have an initiative on the November 6 State Election ballot.

And as printed in black face type, on page 209 of the same issue, the Supreme Court of California handed down a decision on September 5, whereby the Chiropractic Initiative will also be on the ballot. In other words, two cultist initiatives will be up for consideration and decision on November 6th.

* * *

Deplorable Standards of Cultists.—In these pages, we do not desire to go into detailed discussion of the many provisions in each of these initiatives, to which legitimate exception could be taken; but it may be said that, to supporters of scientific healing art practice each of the above two groups has deplorable standards, when viewed from the standpoint of present-day civilization and of scientific knowledge.

When, for instance, the proposed Naturopathic Initiative is read, its far reaching scope must be at once evident.

For here comes an organization, akin somewhat to an ordinary medical society (and of far lesser age and of vastly less prestige than many), and it has the temerity to go before the citizens of California to request that it be endowed in *perpetuity* (a fifty or a ninety-nine year lease proposition is not sufficient, apparently, for these drugless healers, they must have it established for endless time!) to carry on the licensure of its disciples, and that absolutely without let or hindrance from the great State of California!

* * *

Who and What Is the "Naturopathic Association of California"?—They propose to license all members of a certain "Naturopathic Association of California." How many members has that association today? How many members did it have one, two, five, ten years ago? Will it have more or less than its present number, in case the initiative is voted upon favorably by the electorate? Could new members be entered upon the membership rolls between November 6 and the date, sixty days or so later, on which the law would become effective? How many of these naturopaths possess an honest four year high school education? How many possess a mere reading, writing, arithmetic, preliminary education? What were the professional courses which these persons faithfully studied, in *actual attendance?* How many possess preliminary liberal arts education and four years' rigid healing art training? Why should persons with only the three R's education, and one or two problematical, so-called professional courses (perhaps in certain cases, *in absentia*), be permitted to receive legal recognition, equal in all respects to that which California grants or gives, only after meticulous examination, to Americans who have had, among other things, the following:

a full high school education;

two years of liberal arts education;

four years of stringent professional training; and often

one or two years of clinical experience, in a modern day scientific hospital?

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

Could Anything Be Much Worse?—What a travesty on modern day intelligence and civilization, that such low standards as are outlined in the initiatives referred to, should be submitted to the citizenry of California!

Let no physician who has decent regard for his own self-respect, or who really loves his profession, be laggard at a time like this. He who thus stultifies himself today, may rue with remorse his defection, on the tomorrows. The Chiropractors secured recognition some ten years ago, and several thousand have been licensed since that time. They are earning their livings. They advertise, many of them, as do tradespeople. Unthinking citizens, knowing them to have had the legal sanction of the State, go to them in the belief that they are properly trained practitioners. Ask yourself what effect their advent and presence has had upon the progress of scientific medicine and upon your own personal practice? And upon the incomes of those medical men, who have had tenfold and more of education and training than that possessed by these cultist disciples?

And when, to this aberrant branch of the Chiropractic group, is added another still more indeterminate number of a new cultist group—the Naturopaths—what then?

To you, Members of the California Medical Association, we ask, is this or is this not, your business? If it is not your business, whose business is it? If these two initiatives become laws, what will be your position in the eyes of the public, two, five, ten, twenty years from now?

Stop, look, listen! Think!! Act!!!

MEDICAL EXHIBITS AT THE CHICAGO CENTURY OF PROGRESS FAIR—THEIR LESSONS AND VALUE

The Excellence of the Scientific Exhibits at the Century of Progress Fair.—The Chicago Century of Progress Fair, now in its second year of operation, is scheduled to close within the next thirty days. The Fair must be visited to be appreciated, because realization of its worth mounts with each repetition in attendance. It is of such excellence that one commits no exaggeration to one's friends when the offer of the Western Union Telegraph Company to forward a straight day telegram to any part of the United States for the sum of only twenty-five cents is accepted and a stock message sent; such as, "The Fair is a liberal education in accomplishments and a marvelous stimulant of confidence in our future."

The Hall of Science is the name of the structure in which the exhibits of the Division of the Basic Sciences are housed. Here may be found displays showing how sciences such as physics, chemistry, biology, geology, and medical science have groped from the realms of darkness by means of discoveries whose beneficent possibilities give the background of much of what is deemed most characteristic in our modern-day civilization.

* * *

Connotation of the Term, "Basic Sciences."—The people of California on November 6, by their ballots, must decide whether one or two pseudo-sciences will be legally recognized by the granting of licensure to the supporters of such make-believe pronouncements. If the thoughts which are incorporated in several paragraphs from the foreword of the official handbook of the Hall of Science could be brought home to California voters, the difference between real medical science on the one hand, and pseudo-medical or so-called "cultist science" on the other, would at once become manifest, and there would be little doubt as to the decision of the California electorate. We quote:

"The fundamental conception of all science is the orderliness of nature. . . .

"All basic sciences have another characteristic in common, namely, the method of verification or proof by experiment. Nothing is accepted as a scientific truth until it has been demonstrated. Science uses theories, hypotheses, and even guesses, but they remain theories or guesses until they are tested by the experimental method, the method of science.

"The experimental method is essentially 'common sense.' In ordinary life, if we wish to discover how something behaves, we use our reason to suggest an explanation, and then we try it out to see if the explanation fits the facts. If it doesn't fit the facts, we discard it and try something else. The Basic Sciences use this method of trial and error more carefully than we do in ordinary life, but the principle is no different. The 'laws' of science are only laws because they have been demonstrated to fit the facts. Hence, it is obvious that there is nothing mysterious in science; nothing that the student cannot understand if he is willing to examine the facts and exert his intelligence to follow the logic of the explanation. . . .

"The sixth group of exhibits deals with medicine, which is a combination of both applied science and basic science. In one sense Medicine applies the conclusions discovered in biology, chemistry, and physics, hence must be considered an art. It is equally true, however, that the modern research aspect of Medicine has attained tremendous proportions. The medical sciences use the methods of basic sciences, their instrumental equipment, and their great body of organized knowledge. For these reasons, the medical sciences have a proper place in the Hall of Science."

* * *

Some of the Institutions Represented in the Basic Science Exhibits.—The above foreword to the description of the medical science section in the Hall of Science booklet explains admirably what was attempted, (and, it may be added, what has actually been attained), in the exhibits of such organizations and institutions as the American Medical Association, American College of Surgeons, American Institute for the Deaf and Blind, American Pharmaceutical Association, American Dental Association, Chicago Roentgen Society, Institute of Medicine of Chicago, Mayo Foundation, Loyola University, Northwestern University Medical School, University of Chicago, University of Illinois, Henry Ford Hospital, and others.

* * *

The Handbook Introduction to the Description of the Medical Science Exhibits.—The description of the nature of the various exhibits in the medical science area begins with the following

paragraphs which give an excellent summary of the aims of the medical science sections:

"For the first time in the history of international expositions in America, organized Medicine, Dentistry, and Pharmacy have presented at the Century of Progress Exposition the story of their contributions to the progress of civilization.

"The objectives of the exhibits on health education by the visual and auditory methods are: (1) to compare health conditions of a hundred years ago with those of today; (2) to instruct the public in the intricacy of the living human machine, and to give warning not to meddle with it by dangerous self-medication; (3) to interest the layman in the scientific story behind the physician's services and opinions regarding health and sickness; (4) to show that compassion for suffering humanity and not commercialism has ruled the lives of the great discoverers and practitioners of medicine."

* * *

Public Health Exhibits at State and County Fairs.—Because medical exhibits have been used during the last two years at the California State and several county fairs, the ways in which the different organizations noted above presented their material and information should be of interest. Also, the manner in which the lay public crowded into certain exhibits, while giving others only a casual glance, should enable us to come to better conclusions concerning types of exhibits which have special appeal to the laity. Since public health exhibits are gotten together primarily to educate the lay public concerning the achievements of preventive and curative medicine, all methods, of whatever nature, which would promote that end, should be worthy of careful thought.

* * *

Important Elements in Health Exhibit Construction.—In the first place, as regards size and arrangement of an exhibit. Granted that the quality of the exhibit material is equally meritorious, a large space gives a better impression than a small area; and only rarely can it be an advantage for an organization to have several isolated exhibits. Secondly, ease of ingress and egress to main corridors, supplemented by good lighting arrangements, is much to be desired. On that account the advantages and disadvantages of partitions and railings must be carefully evaluated.

The manner in which the explanatory legends and charts are presented is important. The eye should not only catch these easily, but whatever text is used, it should be easily understandable.

This is also true of charts, models, diagrams, dioramas, transparencies, motion pictures, and other means of explaining or emphasizing facts or methods. In short, painstaking thought should be given to all details that can aid in exciting the interest of the lay public.

* * *

Some Impressions About Certain Chicago Exhibits.—It may be permissible to give some personal impressions of several of the Basic Science exhibits. To begin with, the Mayo Foundation exhibit seemed as crowded as any. The presentation of material was excellent, but not necessarily superior to that in other exhibits. However, by the use of three large arc alcoves, entirely open from the main corridor, it was easy for the public to pass in and out.

The splendid and instructive Cleveland Clinic Foundation exhibit, was handicapped, in our opinion, by comparatively narrow entrances and exits, and by deficient overhead lighting, so that many persons passed by with only a distant glance; whereas, if they had entered and paused to consider the instructive material, every group around a diorama would have drawn additional persons to swell the crowd.

The dental profession and its affiliated organizations showed a fine spirit of coöperative effort in pooling their interests. The names of exhibitors and contributors were modestly printed on two framed lists. This exhibit by the American Dental Association, and its affiliated institutions and organizations was larger, and in many ways more attractive and instructive, than that of the American Medical Association.

The American College of Surgeons also presented an excellent exhibit which, however, to our mind, could have increased the number of its visitors if some of the partitions next to the corridors had been of smaller size.

The Loyola University exhibit presented an extensive display of human embryo and adult body specimens, and here, on crowded days, long lines of waiting people were to be seen. By contrast, one of the isolated booths of the American Medical Association was given over to tularemia, Rocky Mountain and undulant fevers; three diseases having some interest for physicians, but very little appeal to lay persons, as was evidenced by the comparatively sparse attendance.

* * *

The American Medical Association's Obligation in This.—In conclusion, it may be stated that the medical section of the Basic Science display of the Century of Progress is easily the most comprehensive and valuable presentation of exhibits on the achievements and aims of scientific medicine that has thus far been produced; and if part, or all of it, could be brought to the consideration of the American public, great good would result.

In this connection, attention is called to the resolution adopted by the Council of the California Medical Association, and presented to the American Medical Association House of Delegates at this year's session in Cleveland in which the American Medical Association was petitioned to have made an extensive series of photographs (simple, inexpensive kodak prints would answer the purpose of permanent record) so that constituent state medical associations which had inaugurated the plan of presenting at state and county fairs exhibits on scientific medicine and public health work, would be in position to avail themselves of the great suggestive value of such an album of photographic reproductions. Each of the exhibits at the Century of Progress Fair represents much thought and labor by one or more persons. Why lose all this splendid portrayal when, through the expenditure of a few hundred dollars by the trustees of the American

Medical Association, constituent state associations would save many times the amount of money so expended, by being given the opportunity to avail themselves of the Century of Progress experience. Why make constituent state associations who wish to carry on educational programs at state and county fairs create their exhibits in amateur fashion at greater cost, and more mistakes and less efficiency when, at small expense, the start can be made with the excellent material of the great Progress Fair itself?

When the California Medical Association, three or four years ago, planned its initial exhibit, request was made of the American Medical Association for suggestions and copies of any material it could loan for study and consideration. We received at that time one-half dozen or so placards that were at most of such degree as to make the reply to our request little less than pathetic. The American Medical Association now has at its doors, in its central headquarters, an opportunity to rectify all this, and at almost trivial expense. If it fails in this opportunity, we know of at least one constituent state association that will be somewhat disappointed in the national body's lack of vision.*

ANTI-VIVISECTION PROPAGANDA

Quirks of Anti-Vivisection Reasoning.—If a new anti-vivisection law is not submitted within thirty days after the California Legislature convenes on January 2, 1935, such tardiness on the part of the persistently-recurring proponents of this supposedly humanitarian measure will cause surprise. In reviewing anti-vivisection efforts, it soon becomes evident that a considerable number of those fellow citizens who advocate laws against animal experimentation (in which proposed measures, the drastic and comprehensive nature of certain provisions are often beautifully concealed in high sounding and seemingly innocent phraseology), have notions that are altogether in error. Since many of these proponents bear excellent reputations for honesty, and a capacity for sane balance in their business and social relationships, it must be assumed that such citizens are found in the camps of the anti-vivisectionists, only because they have been misled into believing things to exist which do not, and using such false impressions as premises from which they draw even more erroneous conclusions.

In a world in which countless thousands of animals go to slaughter every day, in order that food and other supplies for the human race may be made accessible, and in which also birds and animals without end are daily hunted in the name of sport (ofttimes, however, only to be wounded and go to death in agony and starvation), it is difficult to understand the mental processes which lead otherwise clear thinking and intelligent citizens to support anti-vivisection societies, and the measures frequently espoused by such organizations.

In California, in addition to its great natural resources, there is a climate and a body of citizens, that mark it as one of the foremost of American commonwealths, but which also, through possession of these attributes, seems to have a special magnetic power in drawing to it faddists and cultists of all kinds and degrees, it is not surprising that some of the extremists in the anti-vivisectionist groups should have been more than active.

* * *

An Experience in Chicago.—For the consolation of Californians we reprint here an exerpt from an item in the Chicago *Herald and Examiner* of September 20, which came to our attention on the same afternoon when we had spent some time in one of the booths of the Northwestern University, at the Century of Progress, studying with admiration the splendid and convincing arrangement of an exhibit entitled, "Contributions of Animals to Human Health."* The various animals which had been used in scientific animal experimentations were listed, and under each was outlined in brief form the nature of the discoveries which had been made through such investigations, and how the utilization of the discoveries had created powerful factors in the conservation of the health and lives of human beings.

We made a memorandum of the exhibit in the hope of securing a copy of the data contained therein, for possible use in California. On reaching our hotel, we picked up the Chicago *Herald and Examiner,* to find an item confronting our eyes which we believe our readers will agree is written in the "best California anti-vivisection style." Space can be given to only two brief paragraphs.

"There was a blind man yesterday finding his way from one medical school to another, hoping to save his dog—a mongrel named Jack—from the knife of the vivisectionist. . . . . .

"'I am worried, terribly worried, about what may happen to Jack. Stories have been read to me from the *Herald and Examiner* about how dogs have been supplied from the city's pound to the operating tables of doctors and students who torture them in the name of science.'" . . . . .

* * *

What the Above Teaches.—And as regards the lesson which may be drawn from this single afternoon's experience, namely of highest type scientific exhibit and newspaper sentimentalism?

None other than that in our present day civilization, nothing need really surprise us. And further, that in loyalty to the truth and to our race, we must be tireless in our endeavors to carry on educational work among patients and friends concerning the true facts about scientific animal experimentation, and what has been accomplished thereby, so that the efforts of mawkish or extremist anti-vivisectionists will come to naught.

Readers do themselves an injustice if they fail to read Doctor Ivy's article on pages 247-250 of this issue.

* EDITOR'S NOTE.—Since writing the above, we have been informed that steps will be taken by the American Medical Association's Department of Health and Public Instruction to secure photographs and other data, as outlined in these comments.

* EDITOR'S NOTE.—Through the courtesy of Professor A. C. Ivy, we are able to print in this issue of CALIFORNIA AND WESTERN MEDICINE the legends to which reference is here made. See page 247.

"NEEDY BLIND" OF CALIFORNIA—FURTHER COMMENTS

On page 128 of August and page 212 of the September issues of CALIFORNIA AND WESTERN MEDICINE were printed some comments on the manner in which California was determining who were entitled to public funds because of belonging to the group of the "needy blind." The editor sent a copy of the August CALIFORNIA AND WESTERN MEDICINE to Dr. Edward Jackson of Denver, who among American ophthalmologists is held in highest regard and looked upon as the dean of their specialty. For his reply, see page 285 in this issue.

The medical report blank for blindness which Doctor Jackson was instrumental in having the State of Colorado adopt is markedly different from the somewhat loose and indefinite form put out by the Division of the Blind of the Department of Public Welfare of the State of California. It is hoped that the California Division of the Blind will write to other states which make provision for the care of the blind, secure copies of their report blanks, and then, in coöperation with representatives of the medical profession who are ophthalmologists, decide upon a new blank that will better safeguard the interests of the really blind, the taxpayers, and all others who may be concerned.

A comparison of procedures in vogue in other states does not make to the advantage of California. Ours should be as good as the best, rather than but little better than the worst.

ARGUMENTS AGAINST THE CHIROPRACTIC AND NATUROPATHIC INITIATIVES

In the Miscellany Department of this issue, page 285, arguments against the Chiropractic and Naturopathic initiatives are printed, as taken from the booklet sent to all registered voters by the Secretary of State of California.

Do not fail to read the same.

EDITORIAL COMMENT*

ACUTE SUBDELTOID OR SUBACROMIAL BURSITIS—A SUGGESTION

In Dean Lewis's "Practice of Surgery," Vol. 2, Chap. 5, p. 203, one will find an excellent discussion of the clinical features of acute and chronic bursitis in the shoulder-joint, with particular reference to the subdeltoid or subacromial bursae; and, therefore, no further remarks are needed as to the signs or symptoms that would lead to a diagnosis.

In regard to treatment, however, in practically all textbooks and articles on this subject, hot compresses, diathermy, salicylates, and rest have been advocated—which entail a period of disability ranging from two to four weeks.

A method that we have not seen described previously—which has been extremely useful in treating patients with this condition in our office—consists of multiple punctures of the bursa. This method is an extremely simple one, and in a number of our patients has given immediate relief.

The technique consists of inserting a 20-gauge needle, mounted on a 5 cubic centimeter syringe, containing 1 or 2 cubic centimeters of 1 per cent novocain, into the bursa itself, injecting the novocain as the needle is being inserted. A little suction on the plunger of the syringe will often evacuate some clear yellow fluid, always sterile and occasionally containing leukocytes. The needle is inserted into the bursa through the single skin puncture in some ten or twelve different directions in order to thoroughly puncture the wall of the bursa; following which the needle is withdrawn.

We have had a number of patients, either with or without calcified bodies in the bursa itself, who have experienced immediate relief after this treatment, and have required no further subsequent treatment; nor was it necessary to put the arm in a sling.

We consider that the presence or absence of x-ray shadows about the shoulder is of very little significance in the diagnosis of a bursitis.

In view of the striking results obtained by this very simple procedure, it is certainly a method of first choice. The saving of time and expense to the patient is obvious.

384 Post Street.

ALANSON WEEKS,
G. D. DELPRAT,
San Francisco.

CRYPTIC AND SYNERGISTIC MICROBIC INFECTIONS

In 1918, it was noted in many regions of the Middle West that both man and hogs were suffering from "influenza." In swine the disease was characterized by sudden onset, fever, extreme prostration, and abdominal breathing. The duration of the acute prostration usually varied from two to six days, the mortality from 1 to 4 per cent. Autopsies in fatal cases usually showed an edematous bronchopneumonia. Subsequent inoculation experiments showed that this "hog flu" can be transmitted to healthy swine by the intranasal instillation of infected mucus, or infected pulmonary juices.

Various bacteria have been isolated from such infectious materials, the most common being an influenza-like bacillus found in about 95 per cent of all cases.[1] Attempts to reproduce swine influenza by intranasal instillation of pure cultures of this bacillus, however, have been almost invariably negative. The bacillus is apparently nonpathogenic.

Doctor Shope[2] of the Rockefeller Institute, therefore, turned his attention to the possibility that "hog flu" is caused by a filterable virus. Intranasal instillation of Berkefeld filtrates from demonstrably infectious materials, however, almost invariably produced no very appreciable symptoms. The hogs were often somewhat less active than normal for two or three days after adminis-

* This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

tration of the filtrate, and at times showed some loss of appetite. There was never a fever, however, and no prostration. The filtrates, though slightly toxic, were practically non-pathogenic.

On intranasal instillation of a mixture of the influenza-like bacillus and the filtrate, however, typical prostration and fever are produced, with a mortality of about 10 per cent. Since the filtrate contains an apparently self-propagating transmissible agent, Doctor Shope was forced to the conclusion that this is a true composite infection, a "synergism" [3] between a bacterium and a filterable virus.

Doctor Shope's conclusion is of basic clinical interest, since somewhat similar "bivalent" or "synergistic" etiologies have been suggested though not yet proved for scarlet fever, whooping-cough, human influenza, and "malignant diphtheria." The latest suggestion along this line is that infantile paralysis is a "duplex" infectious disease; a neurotropic virus "accelerated" by certain toxin-producing enteric micro-organisms.[4]

Doctor Shope found that the immunity acquired, as a result of a natural or artificial infection with "hog flu," is apparently not bivalent but monovalent in character. Vaccination with the bacillus alone produces no symptoms and confers no immunity. Carrier conditions may be established. Vaccination with the filtrate alone, while producing no very apparent symptoms, leads to effective humoral immunity.

In its practical epidemiology, the simultaneous transfer of both bacillus and virus to a healthy herd produces a typical epidemic, often prostrating 100 per cent of the herd. Fortuitous transfer of the virus alone, or of the virus associated with a non-coöperating type of the "hog flu" bacillus, may cause a cryptic epidemic with no apparent symptoms. This cryptic infection, however, leads to an effective immunity. Accidental recombination of virus and suitable bacillus during such an unrecognized epidemic, however, may cause the spontaneous appearance of prostrating symptoms in an apparently healthy herd.

Stanford University.

W. H. Manwaring,
Palo Alto.

THE PHYSICIAN AS A CITIZEN

The proper attitude of the physician toward the duties and responsibilities of citizenship is a many-sided question. Is there any sufficient reason why he should be considered, or consider himself, in a class separate from other men with reference to the obligations of organized society? Certainly not. Yet something may be said in defense of the course he has so long followed, and for which he is so often criticized and condemned.

The word duty is as big and sacred to the physician as to any other man. But his interpretation of it may be, in the nature of things often must be, gauged by a different standard. No other class of men, for instance, is the recipient of the intimate confidences of individual and family life which constitute a part of the physician's daily routine. Health, happiness, life itself, lie at the heart of the issues that make up the sum of his professional existence. There is some reason why the problems which seem to him most important should be those relating to his "cases," rather than to society in general. And from the standpoint of those "cases" this is as it should be. It is perfectly natural that the public should regard with misgiving any physician who concerns himself unduly with politics, sport, or similar pursuits.

But no line of argument can establish the claim that the physician's whole field of vision should be contracted to the work by which he earns his daily bread. He lives under the protection of law and participates in the advantages of a highly developed social system, and solemn obligations to nation, state, and community are due from him as from other men. The position can not be sustained that the medical man is justified in an attitude of evasion and aloofness by which his neighbor must bear a double burden, or the general welfare suffer. Such an attitude can not fail to be a factor in the perversion of law and the demoralization of politics.

It is specious reasoning for the physician to plead the exactions of his practice as an excuse for failure to exercise his suffrage, or to exhibit a becoming concern in the administration of public affairs. The lawyer is engaged with his clientele, the pastor with his flock, the merchant with the details of his business; yet to none of these can it be justly imputed that he habitually ignores the call of civic duty.

Admittedly, the fundamental condition of all social and material prosperity is the health and vigor of the people. The problems of disease in large measure have been solved—in theory at least. But human beings continue to suffer and die from causes that can be and should be controlled.

At the present time, especially, wise counsel and forceful direction are required if the many agencies at work are to be correlated and guided into safe constructive channels. Whether the methods employed be legislative or purely educational, intelligent, aggressive leadership, for which the physician is best qualified by training and experience, is indispensable.

Without specific mention, it may be stressed once again that issues of tremendous importance are developing and multiplying in California from day to day. The very life of the profession is in the balance. Opportunity for service is great; the need is urgent; the cause is incomparably worthy. The policy adopted by the individual physician will go far to determine the result.

947 West Eighth Street.

A. B. Cooke,
Los Angeles.

1 Lewis, P. A., and Shope, R. E.: J. Exper. Med., 54:361, 1931.
2 Shope, R. E.: *Ibid.*, 54:373, 1931; 56:575, 1932; 59:201, 1934.
3 Holman, W. L.: The Newer Knowledge of Bacteriology and Immunology, Chapter VIII, p. 103. University of Chicago Press. 1928.
4 Toomey, J. A.: Proc. Soc. Exp. Biol. and Med., 31:1015 (May), 1934.

CALIFORNIA MEDICAL ASSOCIATION

FREDERICK C. WARNSHUIS, M. D., Associate Editor for California

This department contains official notices, reports of county society proceedings and other information having to do with the State Association and its component county societies. The copy for the department is edited by the State Association Secretary, to whom communications for this department should be sent. Rosters of State Association officers and committees and of component county societies and affiliated organizations, are printed in the front advertising section (Adv. pages 2, 4 and 6).

CALIFORNIA MEDICAL ASSOCIATION

CLARENCE G. TOLAND.....President
ROBERT A. PEERS.....President-Elect
FREDERICK C. WARNSHUIS.....
Secretary-Treasurer and Associate Editor for California

COMPONENT COUNTY MEDICAL SOCIETIES

CONTRA COSTA COUNTY

The first meeting of the fall session of the Contra Costa County Medical Society was held on Tuesday, September 11, at the Hotel Carquinez, Richmond.

The meeting was called to order by Dr. Melvin Stauffer of Pittsburg, president, at 8:20 p. m.

Dr. H. L. Carpenter of Richmond was chairman of the evening, and Doctor Stauffer called upon him to present his guest speaker of the evening. Dr. Stewart Irwin of Oakland discussed most comprehensively the newest and most approved methods of treating the pneumonias, and upon the urgent insistence of the members, also presented some of the newer developments in the treatment of arthritis. Both papers were followed by interested discussion by the various members.

Following the papers, Doctor Stauffer thanked Doctor Irwin, on behalf of the society, for the inspiring talks.

A letter was read by the secretary from Dr. Emma Pope, relative to the legal defense provided to members of the society who wished to avail themselves of the service offered by the California Medical Association.

Dr. U. S. Abbott reported very fully upon the convention of the California Medical Association, which was held in Riverside in April.

The meeting was adjourned by Doctor Stauffer at 10:10 p. m.

This was followed by the usual enjoyable hour of social contact, with a buffet supper.

CLARA H. SPALDING, *Secretary.*

MONTEREY COUNTY

The regular meeting of the Monterey County Medical Society was held on September 7 at the Hotel La Rebena in Carmel. Dinner was served at 7:30 p. m. The meeting was given in honor of the older men of our profession, especially of Dr. Dorus Brumwell, who is a charter member of the Monterey County Medical Society. Dr. John Gray was chairman of the evening and great credit is due him for the time and effort he put forth in arranging the meeting, which turned out to be one of the most enjoyable evenings which the society has had. Interesting talks on early Monterey medical history were given by Doctors Brumwell, Garth Parker, and J. A. Beck. As a guest we were glad to welcome Dr. Benjamin Bailey of Lincoln, Nebraska, who has practiced medicine for the past fifty-three years, and is the oldest practicing physician in Lancaster County, Nebraska. Of special interest was the story told by Doctor Parker of the delivery by his father, Dr. John Parker, of quadruplets in a little shack on the coast below Monterey. To reach the place of confinement, Doctor Parker traveled over sand hills in a two-horse buggy from Castroville, changing horses in Monterey. Dr. Garth Parker stated that all the babies lived, and that he had the pleasure of confining one of them and of taking out tonsils and an appendix on some of the grandchildren.

The following members were present: Doctors J. A. Beck, L. M. Andrus, D. Brumwell, C. F. Bullard, H. F. Dormody, R. M. Fortier, C. Galligan, C. B. Gorham, J. R. Gray, H. S. Hoyt, E. F. Kehr, R. A. Kocher, W. H. Lawler, H. Lusignan, J. A. Merrill, Garth Parker, G. A. Starbird, J. P. Sandholdt, C. Wilson, M. Wolfson, and G. Eberhardt.

At our last meeting, held in Salinas at the Jeffery Hotel, Dr. H. Spencer Hoyt of Monterey reported on a series of cases of acute intestinal obstruction. These cases were operated on at an average of eleven hours after onset of symptoms. Doctor Hoyt pointed out that all observers agree that the time element is the all-important factor in this type of surgery, and the excellent results obtained were to be attributed to early operation rather than to any particular operative technique. Serial flat plates of the abdomen, taken at half-hour intervals, helped greatly in arriving at an early diagnosis. Doctor Hoyt also favored the use of spinal anesthesia as a valuable aid in the operation. Discussion was led by Doctors Parker, Gray, and Reeves.

WILLIAM H. LAWLER, *Secretary.*

SAN JOAQUIN COUNTY

The regular monthly meeting of the San Joaquin County Medical Society was held in the Medico-Dental clubrooms in Stockton on September 6. The meeting was called to order at 8:26 p. m. by Dr. P. B. Gallegos.

The applications for membership in the San Joaquin County Medical Society of Doctors G. C. Richardson of Sonora and E. W. Thomas of Stockton were reported on favorably by the Membership Committee and they were duly declared elected to membership in the medical society on payment of their dues.

Dr. Dewey Powell reported that the Public Relations Committee and the Woman's Auxiliary of the San Joaquin County Medical Society had accumulated considerable data for broadcasting, but to date had been unable to locate a sponsor.

Doctor Gallegos reported on the joint meeting of the physicians and dentists during the summer months, at which time a Public Health League of California Chapter was established in Stockton. He urged that there be more interest taken by the members of the local medical society so that the membership in the Public Health League would be increased.

Dr. Barton Powell, Jr., stated that a lens and carrier had been removed from the society's lantern during the summer months. He moved that the Board of Directors be empowered to repair the old lantern and

buy a new one if they saw fit. This was seconded by Dr. Dewey Powell, and the motion carried.

The scientific paper of the evening was presented by Dr. Fred H. Kruse of San Francisco, who spoke on the *Management and Treatment of Peptic Ulcers.* Doctor Kruse discussed this condition very exhaustively and demonstrated by case history and x-ray films. The paper was discussed by Doctors G. H. Sanderson, Frank Doughty, and B. W. Knopf.

There being no further business to be brought before the society, the meeting was adjourned at 10:16 p. m. and refreshments were served.

G. H. Rohrbacher, *Secretary.*

CHANGES IN MEMBERSHIP

New Members (33)

Alameda County.—Burton A. Adams, Harry Horwitz.

Fresno County.—Frank K. Pomeroy.

Los Angeles County.—John L. Aird, R. R. Barbanell, Clifford L. Bartlett, Clarence V. Clemmer, Tracy R. Comstock, Elizabeth G. Dozier, Edward T. Fogel, Albert E. McEvers, Erich Reinard, Gilbert J. Roberts, Heronde N. Sheranian, Louis I. Sokol, Buell H. Sprague, Elvin H. Stanton.

Orange County.—Donald Abbott.

San Bernardino County.—John H. Coughlin.

San Diego County.—John D. Macpherson, Wesley S. Smith.

San Francisco County.—Frank M. Close, Rachel Gorb, Sidney M. Gospe, Robert L. Groves, John O. Haman, Clarence C. Porter, John Mott Rector, Bernard Strauss, Carl Winternitz.

San Joaquin County.—Ralph G. Cressman, G. C. Richardson.

Shasta County.—Curtis M. Hanna.

Resigned (4)

W. I. Clayes, from San Francisco County.

Vaughn H. Mitchell, from San Francisco County.

Martin E. Simon, from San Francisco County.

Ernest A. Victors, from San Francisco County.

In Memoriam

Andersen, Louis Nels. Died at Inglewood, September 6, 1934, age 69. Graduate of College of Physicians and Surgeons, Kansas City, Missouri, 1896. Licensed in California in 1919. Doctor Andersen was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

Clarke, Louise Harvey. Died at Riverside, August 27, 1934, age 75. Graduate of the Woman's Medical College of Philadelphia, Pennsylvania, 1892. Licensed in California in 1893. Doctor Clarke was a member of the Riverside County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Congdon, Willis Rollin. Died at Santa Cruz, August 18, 1934. Graduate of Rush Medical College, Chicago, 1889. Licensed in California in 1896. Doctor Congdon was a member of the Santa Cruz County Medical Society, the California Medical Association, and the American Medical Association.

Davis, William Seymour. Died at Corona, August 31, 1934, age 73. Graduate of Miami Medical College, Cincinnati, 1885. Licensed in California in 1886. Doctor Davis was an honorary member of the Riverside County Medical Society, a former member of the California Medical Association, and the American Medical Association.

✝

Fry, Philip Benjamin. Died at Benicia, August 21, 1934, age 62. Graduate of the University of California Medical School, 1902. Licensed in California in 1903. Doctor Fry was a member of the Solano County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Johansen, Erneste Augustus. Died at San Francisco, September 8, 1934, age 68. Graduate of Jefferson Medical College, Philadelphia, 1892, and licensed in California the same year. Doctor Johansen was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Kellogg, Llewellyn C. Died at Loma Linda, September 1, 1934, age 59. Graduate of the College of Medical Evangelists, 1922, and licensed in California the same year. Doctor Kellogg was a member of the San Bernardino County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Kuser, John Henry. Died at San Rafael, August 27, 1934, age 70. Graduate of Ludwig Maximilians-Universitat Medizinische Fakultat, Munchen, Bavaria, 1885. Licensed in California in 1895. Doctor Kuser was a member of the Marin County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Roe, Jesse Nathaniel. Died at Riverside, August 4, 1934, age 62. Graduate of the University of Buffalo Medical School, 1908. Licensed in California in 1927. Doctor Roe was a member of the Riverside County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Sexton, Charles Loyal. Died at Los Angeles, August 23, 1934, age 66. Graduate of Cooper Medical College, San Francisco, 1895, and licensed in California the same year. Doctor Sexton was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

Seymour, James Harvey. Died at Los Angeles, August 13, 1934, age 74. Graduate of the Columbia University College of Physicians and Surgeons, New York, 1883. Licensed in California in 1889. Doctor Seymour was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✝

Tilton, Albert Llewellyn. Died at Los Angeles, August 31, 1934, age 64. Graduate of the University Medical College, Kansas City, 1899. Licensed in California in 1919. Doctor Tilton was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

OBITUARIES

James H. Seymour

1860-1934

On the thirteenth of August both Los Angeles and Southern California were called upon to mourn the loss of one of their most valued citizens. The medical profession, too, was saddened by the passing of Dr. James H. Seymour, whose personality and work have been revered for so many years.

Doctor Seymour was born in Gloversville, New York, in 1860. His medical education was obtained at Columbia University, in the College of Physicians and Surgeons, from which he was graduated in 1883, and since 1889 he has been an ardent and loyal worker for medicine in California. He was also an important factor in medical teaching, having been a member of the faculty of the College of Physicians and Surgeons of the University of Southern California.

Doctor Seymour's character was of rare sweetness, and through it he was of service to patients, fellow surgeons, and students. His judgment was of the best and he was always sought for his nice clinical balance. His hands were both skilful and kind. No young physician ever sought his aid without receiving more than he had requested. For years he devoted much of his time to the building of the hospitals where he worked.

Perhaps his greatest love was expressed in his long devotion to the indigent sick in the Los Angeles County General Hospital. It can truly be said that no finer service could be rendered to human beings than that which he gave the destitute who came under his care. As a councilor on the Board of Medical Advisers to the County Hospital and as chief of the attending surgical staff, he was always faithful to every task. In conference, he was ever mindful and considerate of the interests of the absent ones, represented in any discussion.

Fairness and generosity marked every decision. His life was so full of tenderness, gentleness and consideration for all with whom he worked that it truthfully could be said, he was universally beloved!

The medical fraternity extends its dearest and tenderest sympathy to the sorrowing family, as it joins them in this great bereavement. J. V. B.

✠

L. L. Dorr

1840-1934

Dr. L. L. Dorr (for he always so signed his name rather than by his full name, Levi Lewis Dorr), for many years the oldest member of the San Francisco County Medical Society and who was made an honorary member February 8, 1927, has gone at the ripe age of ninety-four.

Born in Brockton, Massachusetts, April 6, 1840, he enlisted at the age of twenty-one in the Federal Army in the war between the states; was twice wounded, once at Antietam. It was in the Army Hospital in Washington that he met Dr. Henry Gibbons, Jr., who stimulated his interest in the study of medicine. Their friendship, thus started, became intimate and lasted until the latter's death in 1911. They married cousins.

Doctor Dorr was graduated in medicine by the Bellevue Hospital Medical College, New York, in 1866, and came almost immediately to California. He enlisted and served as surgeon in the United States Army, where he saw something of the trouble with the Indians in Arizona. He later made a trip to China as ship's surgeon on one of the Pacific Mail steamers.

He had service at the City and County Hospital, but resigned on his marriage in 1873 and entered private practice. His wife was Miss Janet Raymond.

Prior to 1876 anyone could practice medicine in California, but in that year the first Medical Practice Act became effective on April 3. Licenses to practice medicine were then granted to physicians possessing diplomas. Doctor Dorr's license is dated 1876. He served as Coroner in San Francisco from 1877 to 1881. For many years he was Pacific Coast Medical Referee of the Equitable Life Insurance Company of New York.

In 1882 he was Professor of Materia Medica and Therapeutics in the Medical College of the Pacific, the predecessor of Cooper Medical College. He was a member of George H. Thomas Post No. 2, G. A. R.; member of the Olympic Club for many years, resigning in 1930; of the Pacific Union Club 1889 to 1923.

He is survived by his widow and four children: Dr. William Raymond Dorr, superintendent of the County Hospital at Riverside; Louis Dorr, and two daughters, Mrs. A. C. Lucca of San Francisco and Mrs. Claude E. Brigham, wife of General Brigham, Chief of Chemical Warfare, U. S. A., Washington, D. C.

In spite of the accumulation of years, Doctor Dorr seemed never to grow old. He delighted in association with younger men and retained his interest in their progress almost to the very end. Only in the last three or four years were the infirmities of great age noticeable. In his relations with his fellow man Doctor Dorr was always the courtly gentleman. He was a kindly spirit and he was much beloved by a host of friends. EMMET RIXFORD.

CANCER COMMISSION*

Malignant Tumors of the Thyroid Gland

Report Submitted by the Special Committee of the Cancer Commission of the California Medical Association

CLINICAL DIAGNOSIS

The clinical diagnosis of malignant tumors of the thyroid at a stage sufficiently early to offer a fair prospect of cure is, as yet, an unsolved problem. The listing of symptoms and signs by which malignant tumors of the thyroid can be distinguished from benign, therefore, becomes a matter of prognosis rather than of diagnosis—the more certain the preoperative diagnosis, the more hopeless the prognosis. One need only consider the list of findings suggestive of malignancy and remember that each is dependent upon extension of malignant tissue beyond the capsule of the thyroid gland: undue fixation of the tumor to the trachea or surrounding tissues, hoarseness arising from involvement of the recurrent nerve, dysphagia, local or radiating pain, and enlarged regional lymph nodes. It is true that there are other things suggestive of malignancy, such as rapid increase in size of the tumor or a hard consistency on palpation; but these are by no means diagnostic, for the first sign is found often in cases of benign hyperplasia or hemorrhage into adenomatous cysts, and the latter often is caused by calcareous degeneration of a benign tumor.

This difficulty of clinical diagnosis is explained, to some extent, on the basis of an equal difficulty found by the pathologist in determining definitely the presence of malignancy, even after an exhaustive study of the tissue removed at operation. In fact many pathologists will not agree upon a diagnosis of malignancy in thyroid tissue unless invasion of blood vessels by tumor cells can be demonstrated. It is evident how closely the prognosis is linked with this last criterion.

It follows that the problem of thyroid malignancy is one of prophylaxis and prevention rather than of diagnosis and treatment. We know, through careful follow-up studies, that almost all of the five-year cures are among the patients whose first diagnosis of malig-

* The Cancer Commission was brought into being by the House of Delegates of the California Medical Association to aid in the furtherance of all efforts to combat cancer. The roster of officers and the central office of the Commission to which communications may be sent is printed in this issue of CALIFORNIA AND WESTERN MEDICINE (see front cover directory). This column is conducted by the Secretaries of the Commission.

nancy was made either at the operating table or in the laboratory.

Finding, as we do, that there are no known early criteria of malignancy and that our problem, therefore, becomes one of prophylaxis, we must direct our efforts toward the recognition and elimination of the precancerous lesion if one can be found.

Any enlargement of the thyroid gland is a goiter, but all goiters are not precancerous lesions. A simple classification of goiters is into diffuse and nodular types. The diffuse types (adolescent goiter, simple hypertrophy of pregnancy, exophthalmic goiter), are almost never the precursors of malignancy. The nodular or adenomatous goiters, on the other hand, are the primary lesions in 85 to 90 per cent of malignancies, and from 1 to 5 per cent of all nodular goiters coming to surgery are found to be malignant.

It is the opinion of your committee that nodular goiter should be viewed with suspicion, and that patients having this type of goiter should not be told that it is entirely harmless and will never cause trouble. Operative removal of the goiter is to be recommended in all cases in which (1) recent growth has taken place in a previously stationary gland; (2) fixation of the goiter to the trachea or surrounding tissues has taken place; (3) the consistency of the goiter is hard, and calcium deposits are not demonstrable by x-ray; (4) there is a history of pain, dysphagia, respiratory difficulty or other pressure phenomena in a goiter previously symptomless.

Hyperthyroidism, since it is found in about half of the patients with malignant goiter, has no especial significance with regard to the presence or absence of malignancy. On the other hand, if hyperthyroidism always were considered as an indication of thyroidectomy, half of the patients with carcinoma would be included in those operated upon.

Although your committee does not feel it advisable to recommend the removal of all nodular goiters in persons over the age of twenty-five years, it is, nevertheless, worthy of note that this would be the only approach to the complete elimination of malignant disease of the thyroid gland. With regard to indications of malignancy, and for cancer prophylaxis in patients under twenty-five years of age, it should be pointed out that the most frequent precancerous lesion in this group is aberrant thyroid tissue. We, therefore, recommend the complete removal of all laterally or otherwise abnormally placed thyroid nodules.

TREATMENT

The type of treatment is based upon the stage of advancement at the time of recognition. Patients with thyroid malignancy are best segregated into three classes—those in whom the diagnosis is made before operation; those in whom the diagnosis is made at operation; and those in whom it is made by pathological examination. Those patients in Group 1, who are without demonstrable distant metastases, especially to the bones, should have as complete an electrosurgical removal of the tumor as is possible without damage to the trachea, laryngeal apparatus, or parathyroid bodies. This should be preceded and followed by deep roentgen or radium therapy. In the cases in which the technical difficulties of removal of the tumor seem too great, the procedure may be reversed, or x-ray therapy alone may be resorted to.

The patients in Group 2, in whom malignancy is recognized first at the operating table, usually have malignant adenoma with penetration of the capsule of the tumor. A total lobectomy is indicated in these cases, with the removal of as much surrounding tissue or portions of the other lobe as is necessary to eradicate the growth. In these, as in the cases in Group 1, electrosurgery probably should be used at once upon discovery of the malignancy. A course of intensive roentgen therapy should follow the operation, beginning before the patient is discharged from the hospital.

In Group 3 we find the early cases. In most instances, the growth is entirely within the capsule of the adenoma. In this group are found also the cases of questionable malignancy in which, in many instances, the diagnosis will remain unproved unless recurrence takes place. In the large majority of these cases, the primary operation is curative and no further treatment is indicated. If, however, pathological examination shows that the tumor has penetrated the capsule of the adenoma, a second operation should be done immediately with removal of the entire lobe from which the malignant adenoma arose. Postoperative roentgen therapy is advisable.

In the presence of recurrence many patients may be carried through a number of years and, rarely, even an apparent cure be brought about by roentgen therapy. It is agreed that, if such therapy is not primarily effective or if the malignant tissue eventually loses its radiosensitivity, no benefit can be expected from further surgery.

SUMMARY

1. Cancer of the thyroid which can be diagnosed clinically is rarely curable.

2. In a high percentage of cases, cancer of the thyroid is believed to arise from a malignant degeneration of a previously benign nodular goiter.

3. The malignant potentialities of nodular goiter should be recognized by the medical profession. Patients over twenty-five years of age should not be advised to forget a nodular goiter, but should be observed frequently and asked to report for examination at the first sign of any change in the goiter.

4. Surgical removal should be advised for all patients with nodular goiter if they show (*a*) pressure symptoms, (*b*) progressive increase in the bulk of the goiter, (*c*) pain, (*d*) suggestive fixity, (*e*) hardness in consistency not caused by calcification, (*f*) demonstrable hyperthyroidism.

5. Inasmuch as the operative mortality is from eight to ten times greater in malignant than in benign goiter, early operation, before the onset of malignancy, is to be desired, and the surgical treatment of suspected malignant goiter should be in the hands of surgeons adequately trained in thyroid surgery.

6. Radiotherapy, when given should be thorough, adequate and complete, and should be given by a physician competently trained as a therapist.

Respectfully submitted, The Committee on Thyroid Tumors,

By H. H. Searls, *Chairman*
Frank H. Bowles, *Secretary*
A. B. Cooke
C. T. Sturgeon
Wallace I. Terry

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

MRS. PHILIP SCHUYLER DOANE .....President
MRS. ELMER BELT.....Editor and Chairman of Publicity

Note: The space allotted by the California Medical Association Council to Auxiliary news is one page. At the request of the Auxiliary President, the three and one-half page report on the national convention of the Auxiliary was printed in the September issue (pages 205-208) with the understanding that the October issue would not print any Auxiliary news items.

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. A. Elmer Belt, chairman of the Publicity and Publications Committee, 2200 Live Oak Drive, Los Angeles. Brief reports of county auxiliary meetings will be welcomed by Mrs. Belt and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxiliary notes.

NEVADA STATE MEDICAL ASSOCIATION

HORACE J. BROWN, M.D.....Associate Editor for Nevada

D. A. SMITH, Mina.....President
E. E. HAMER, Carson City.....President-Elect
J. N. VAN METER, Las Vegas.....First Vice-President
W. H. FROLICH, East Ely.....Second Vice-President
HORACE J. BROWN, Reno.....Secretary-Treasurer

COMPONENT COUNTY MEDICAL SOCIETIES

WASHOE COUNTY

The Washoe County Medical Society met on Tuesday evening, September 11, in the State Building. In the absence of Doctor Paradis, president, Doctor Smith presided.

A communication from Doctor Jablons of New York City was read. This communication was in reference to the treatment of the Jewish physicians in Germany under the present Nazi Government. The communication was accompanied by a copy of the resolutions adopted by the New York State Medical Society praying for relief of the harsh treatment being accorded the Jewish physicians of Germany. The communication, together with the resolutions, were ordered referred to the Nevada State Medical Society, to be considered by that body at its annual meeting September 21 and 22.

Next was the presentation of bills by Doctor Brown for newspaper insertions with reference to conditions which arose at the last primary election. Bills were allowed and ordered paid.

The name of Dr. Louis E. Lombardi was presented for membership in the society. It being ascertained that he had complied with all the requirements for admission into the society, upon motion he was unanimously elected.

The Committee on Ways and Means, whose duty it should be to take up matters of legal interest pertaining to the medical profession, then came up for consideration. The chair appointed Doctors J. L. Robinson, George L. Servoss, W. E. Shaw, Horace J. Brown, and Donald Maclean.

There were no clinical cases presented for discussion. The essayists for the evening were then presented. Dr. Francis E. Morley of Gardnerville then presented the paper of the evening on *Antepartum Care*. The following are excerpts from his paper.

"The general practitioner delivers the vast majority of the two million babies born in the United States each year. The mortality from this vast number of the mothers has been placed at from twelve to fifteen thousand per year. Ninety-five per cent of the mothers need neither hospitals nor care of specialists for their accouchement. So the general practitioner will continue to shoulder the responsibility for the care of these women which he is perfectly willing to assume and allow the obstetrician, and other research workers in the meantime to work out such suggestions for preventing this high mortality as their experience will develop.

"The New York Obstetric Society resented the statement as made in November, 1933, by the New York Academy of Medicine in which the Academy of Medicine sought to place the responsibility for fully 60 per cent of this mortality at the door of the general practitioner. The New York Academy of Medicine still went further and stated that the midwife should be encouraged. This unfavorable comment could have none other than a reactionary trend tending to emulate the midwife and to make a scapegoat of the family physician. This report was eagerly seized by the lay press and given the widest publicity, much to the detriment of the hard-working and conscientious family physician. But, fortunately, Doctor Fishbein came forward with the statement that obstetrical care in the United States for the majority of women is as good, if not better, than in the majority of civilized countries.

"Out of the great number of parturient women in the United States, five per cent or less need specialized care. There has been no unusual discovery in obstetrics for the past thirty-five years. Marching along in the vast army of expectant motherhood there are thousands of women who should not be mothers by reason of certain mental and physical defects, while among the remaining number many meet up with abnormal conditions that are peculiar to this period.

"The stress and strain of pregnancy may manifest themselves according to the duration and intensity of this peculiar period manifesting through the renal, hepatic, vascular, cerebral, or glandular systems. When a perfectly healthy woman becomes pregnant, her chances of suffering from gastro-intestinal disturbances is better than 50 per cent. The parturient woman undergoing her pregnancy is physiologically entirely different from what her condition is during the non-pregnant period. The usual nausea and vomiting in pregnancy manifested in 50 per cent of all pregnant women induces physiochemical changes in the body which in turn induces a direct change in her metabolism. Science has not yet determined the cause of these profound physiological changes, and until such is done, the best that our science can do is to intelligently foresee by such means at our command and make every possible effort to forestall an impending crisis.

"Every obstetrician should consider his parturient patient as requiring at least nine periodic health examinations, and more if the circumstance of the case justifies it. Upon the basis of his obstetric judgment derived from these examinations the family physician can best determine what steps to take in the interest of the patient should an emergency arise. The family doctor is the most logical man to render wise antepartum care. He knows the normal physiological limits of his patient and is thoroughly acquainted with the home-life conditions of the patient, and can arrive at a better sense of judgment with reference to her individual reserve than can anyone else. This, after all, will best determine the future well-being of the patient." THOMAS W. BATH, *Secretary.*

Trichomonas Vaginalis Vaginitis.—In treating Trichomonas vaginalis vaginitis, Holter thoroughly cleanses the vulva, vaginal wall, cervix, and anal region with tincture of green soap and warm water. The vagina is cleansed with warm tap water, wiped as dry as possible and dried by holding a low-pressure air current at the mouth of the speculum for a few minutes. The vagina and cervix are then sprayed with a 1:1,000 solution of hexylresorcinol by connecting a spray to the low-pressure air current. A tampon soaked in a solution of boroglycerid is then inserted high into the vagina. The vulva and thighs are then wiped dry and painted with a 50 per cent solution of glycerin. The tampon is removed the next day and the patient takes a douche with one tablespoonful of tincture of green soap in two quarts of water. Douches should be taken morning and night on the two days, following the treatment. The vulva and thighs are painted with the 50 per cent solution of glycerin after each douche. These treatments should be continued until the trichomonads are absent on at least three successive hanging drop examinations. When the treatments are discontinued, the patient takes lactic acid douches daily. During pregnancy, the local treatments can be continued as outlined, until about six weeks before term. After that time it is advisable to use 4 per cent mercurochrome instillations with a sterile catheter every other day. In resistant cases the vaginal walls and cervix may be painted with tincture of iodin instead of the solution of hexylresorcinol.—*Kansas Medical Society Journal.*

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings

American College of Surgeons, Boston, Massachusetts, October 15-19. Franklin R. Martin, M. D., 40 East Erie Street, Chicago, Director-General.

American Medical Association, Atlantic City, New Jersey, June 10-14, 1935. Olin West, M. D., 535 North Dearborn Street, Chicago, Secretary.

California Medical Association, Yosemite National Park, May 13-16, 1935. Frederick C. Warnshuis, M.D., 450 Sutter Street, San Francisco, Secretary.

Interstate Postgraduate Medical Association of North America, Philadelphia, Pennsylvania, November 5-9. W. B. Peck, M. D., 27 East Stephenson Street, Freeport, Illinois, Managing Director.

Radiological Society of North America, Memphis, Tennessee, December 3-7, 1934. Donald S. Childs, M. D., 607 Medical Arts Building, Syracuse, New York, Secretary.

Medical Broadcasts*

American Medical Association Health Talks. — The American Medical Association broadcasts on a western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, central daylight saving time.

* * *

San Francisco County Medical Society. — The radio broadcast program for the San Francisco County Medical Society for the month of October is as follows:

Tuesday, October 2—KJBS, 11;15 a. m., and KFRC, 1:15 p. m. Subject: Colds and Their Complications.
Tuesday, October 9—KJBS, 11:15 a. m., and KFRC, 1:15 p. m. Subject: Epidemic Influenza.
Tuesday, October 16—KJBS, 11:15 a. m., and KFRC, 1:15 p. m. Subject: Communicable Diseases in the Home.
Tuesday, October 23—KJBS, 11:15 a. m., and KFRC, 1:15 p. m. Subject: The Dangers of Sunlight and Ultra-Violet Ray.
Tuesday, October 30—KJBS, 11:15 a. m., and KFRC, 1:15 p. m. Subject: The Staff of Life.

* * *

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of October is as follows:

Tuesday, October 2—KECA, 11:15 a. m. Subject: Health Talk.
Saturday, October 6—KFI, 9 a. m. Subject: Health Talk.
Saturday, October 6—KFAC, 10 a. m. Subject: Your Doctor and You.
Tuesday, October 9—KECA, 11:15 a. m. Subject: Health Talk.
Saturday, October 13—KFI, 9 a. m. Subject: Health Talk.
Saturday, October 13—KFAC, 10 a. m. Subject: Your Doctor and You.
Tuesday, October 16—KECA, 11:15 a. m. Subject: Health Talk.
Saturday, October 20—KFI, 9 a. m. Subject: Health Talk.
Saturday, October 20—KFAC, 10 a. m. Subject: Your Doctor and You.
Tuesday, October 23—KECA, 11:15 a. m. Subject: Health Talk.
Saturday, October 27 — KFI, 9:00 a. m. Subject: Health Talk.
Saturday, October 27—KFAC, 10 a. m. Subject: Your Doctor and You.
Tuesday, October 30 — KFI, 11:15 a. m. Subject: Health Talk.

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to CALIFORNIA AND WESTERN MEDICINE, 450 Sutter Street, San Francisco, for inclusion in this column.

Cancer Commission of the California Medical Association Honored.—A letter from Dr. Alson R. Kilgore, secretary of the California Medical Association Cancer Commission, contains information which should be gratifying to members of the California Medical Association, who have had an opportunity to read the Commission's reports as they have appeared in CALIFORNIA AND WESTERN MEDICINE at different times during the last two years.

Doctor Kilgore writes:

"It should be of interest to the members of the California Medical Association that the cancer survey studies, made by the Cancer Commission, have attracted much favorable interest outside the State. The entire series is being reprinted at the present time in the *Bulletin of the American Society for the Control of Cancer in New York.* The *Bulletin* reaches those interested in cancer and its control throughout the United States and is, incidentally, a monthly summary of important cancer work which should be in the hands of California physicians interested in this important field."

Members of the California Medical Association who wish to receive the *Bulletin* should write to Dr. A. R. Kilgore at 490 Post Street, San Francisco.

Annual Meeting of the Radiological Society of North America.—The Radiological Society of North America will hold its next annual meeting at the Hotel Peabody, Memphis, Tennessee, December 3-7, 1934. The medical profession is cordially invited to attend. Further information may be obtained by addressing the secretary-treasurer, Dr. Donald S. Childs, 607 Medical Arts Building, Syracuse, New York.

President Roosevelt's Interest in Crippled Children. President Franklin Roosevelt, himself a victim of infantile paralysis, through his courage in striving to overcome some of the sequelae of the disease, has led many lay citizens to take an interest in crippled children. An Associated Press dispatch presents the following information:

"President Roosevelt is proving a veritable Pied Piper to the nation's crippled children.

"His interest in them, and their interest in his triumph over infantile paralysis, has caused literally thousands of them to come trooping for attention from remote places. A new national picture of their needs is taking form.

"Surveys in many States have been stimulated. There has now been some actual counting of the noses of the crippled boys and girls, and a tallying of what is being done for them.

"Due to depression's toll on all charitable activities, the results of even these scattered censuses are said to have been sufficiently startling to merit some special attention by Congress next winter when it begins working on the social welfare front.

"Wherever the President goes, crippled children come to him. Mrs. Roosevelt, too, is their magnet. And a steady stream report by mail. . . .

"Some work for crippled children has grown up as an inevitable sideline to relief activities, as State Emergency Relief Association projects put to work unemployed physicians and nurses.

"Mississippi, first State to make a survey in connection with its unemployed activities, found 6,457 crippled children under fourteen years of age.

"A Florida survey showed 4,000 crippled children of school and preschool age, 1,000 from families financially unable to provide treatments.

"In Missouri, 2,889 crippled children's cases were reported.

"Other States whose emergency relief administrations have aided in care and treatment of crippled children are: Arkansas, Colorado, Louisiana, Maine, Michigan, Nevada, New Jersey, North Carolina, Texas, Utah, Washington, West Virginia, and Wisconsin.

"In the nation-wide picture, twelve States supply detailed information of programs which reach all children with physical defects. They are Colorado, Florida, Michigan, Missouri, Nebraska, New York, Ohio, Pennsylvania, Tennessee, Utah, West Virginia, and Wisconsin. Thirty-seven States make some provision for rehabilitation of crippled children. A few States have submitted no evidence of any facilities or plans for their care."

Dinitrophenol.—Dinitrophenol, the antifat drug, said to be used by more than one hundred thousand persons in the United States for reducing, should be placed on the poison list, to be issued only by prescription, it was declared as a round-table discussion at the American Public Health Association meeting in Pasadena, by Doctors Windsor C. Cutting, P. J. Hanzlik and Maurice L. Tainter of the Stanford Medical School at San Francisco. They said dinitrophenol is a high explosive, and was used in the World War.

President of American Public Health Association Gives Views on Birth Control.—President Haven Emerson's remarks were reported as follows:

"Although the United States leads most other nations in public health work, more consideration for the mother must be shown to reduce the maternal mortality rate, Dr. Haven Emerson, president of the American Public Health Association, declared at the association's sixty-third annual meeting in Pasadena.

"Twenty-third on the mortality table of the civilized nations of the world, this country must adopt methods that will eliminate the 'disgraceful condition,' Doctor Emerson said.

"'Let us teach for the sake of women the knowledge which will permit them to choose the time and circumstances of their own child bearing,' the health association president told more than three thousand delegates assembled in the Civic Auditorium.

"He also urged the delegates to 'recognize the new health problem of diabetes, a disorder of metabolism which has grown with a command of foods and the power of mechanics, permitting man's escape from physical drudgery, and teach such adjustment in nutrition and muscular activity as experience indicates.'

"Speaking of the growth in this country and abroad 'in the understanding of the useful functions of agencies for the dissemination of birth control information,' Doctor Emerson urged that health officers confer with hospitals, medical schools and social agencies in their communities so that a collaboration of these elements may come about without violence to the susceptibilities of any church or social group which may hesitate to lend its approval to such a practice.'

Oakland, Pasadena, and Santa Ana Honored in Health Conservation Contest.—A Pasadena newspaper printed the below item:

"Pasadena's health conservation work was second best among cities in the United States with a population of 50,000 to 100,000, and will receive an honorable mention certificate.

Results of the health conservation contest sponsored jointly by the United States Chamber of Commerce and the American Public Health Association was announced on September 5 at the first general session of the association, held in the Civic Auditorium.

"Since 1929, Pasadena has won honorable mention every year.

"Schenectady, New York, won first place in the 50,000 to 100,000 population class. Each first-place winner received a bronze plaque last night.

"The contest is based upon the development of health service, both official and unofficial.

"The other four first-prize winners were Baltimore, population 500,000 or over; Rochester, N. Y., 250,000 to 500,000 population; Hartford, Conn., 100,000 to 250,000 population; and Hackensack, N. J., 20,000 to 50,000 population.

"Adolph Schleicher, director of the United States Chamber of Commerce, made the awards.

"Santa Ana and Oakland were other California cities receiving honorable mention. Only four cities besides Pasadena received honorable mention in the 50,000 to 100,000 population class.

Sterilization in Germany.—Under the caption "Baden Puts Ban on Ridicule of Persons Who Are Sterilized," the Los Angeles *Evening Herald* recently printed the following Associated Press dispatch:

"The State of Baden has published a warning of punishment for persons who ridicule subjects of sterilization operations, of which 572 have been performed since January 1.

"The action is a step in a broadening and coördination of the Nazi Government's eugenics campaign. State governments were instructed by Wilhelm Frick, minister of the interior, to centralize their health records for a national eugenic index."

Interstate Postgraduate Clinics.—An international assembly of the Interstate Postgraduate Medical Association of North America will be held at Philadelphia, Penn., on November 5 to 9, 1934, inclusive. In addition, preassembly clinics will begin on November 3, and postassembly clinics will be continued on November 10. Full information concerning these clinics may be had by writing to the managing director of the clinics, Dr. William B. Peck, Freeport, Illinois. See, also, advertising page 28 of the September CALIFORNIA AND WESTERN MEDICINE. An inspection of the preliminary program indicates a presentation of subject-matter, both didactic and clinical, of broad scope and interest.

Check on Free Treatment in Paris Hospitals.—A cable press dispatch from France indicates that the prestige of the high grade of medical service in public hospitals has produced a dispensary evil akin to that met with in the United States. The news item is as follows:

"Rich people should not be admitted for free treatment in the Paris hospitals, according to the director of the Assistance Publique.

"He states in a circular that, partly because of the economic crisis and partly because of the great improvement in the services of the free public hospitals, a great many people have sought free treatment who were well able to pay for medical attendance in their homes or in private clinics. French hospitals are crowded, and the circular instructs directors to ascertain the financial resources of those seeking admission."

Pacific Association of Railway Surgeons. — The thirty-second annual session of the Pacific Association of Railway Surgeons was held at San Francisco on September 6 and 7. Headquarters were at the Clift Hotel, the meetings being held in Harkness Hall of the Southern Pacific Hospital. The guest of honor was Dr. Walter B. Coffey, chief surgeon of the Southern Pacific Hospital, who was the founder of the Association. The scientific program was given on Friday, September 6, and included papers by the following surgeons: Doctors L. L. Stanley, San Quentin; Walter B. Coffey, San Francisco; Clarence G. Toland, Los Angeles; C. A. Thomas, Tucson, Ariz.; George W. Pierce and Gerald B. O'Connor, San Francisco; E. E. Hamer, Carson City, Nev.; Wallace Dodge, Los Angeles; William L. Weber, Los Angeles; H. H. Beard, New Orleans; Harry Coffey, San Francisco.

The paper by Doctor Thomas was a tone film in natural colors by a new process. One layman was on the program, Mr. Joseph B. Strauss, chief engineer, of the Golden Gate Bridge, who presented slides showing details of the construction of this bridge, which is to have the longest span in the world. On Saturday a visit was made to the Marin towers of the bridge, after which the members of the Association motored to San Quentin, where as guests of the retiring president of the Association, Dr. L. L. Stanley, they made an inspection of the prison, followed by luncheon in the main dining room of the institution. The newly elected president of the Association is Dr. G. L. Sobey of Paso Robles, and the new vice-president is Dr. Ignacio Chavez of Guadalajara, Mexico. Next year's meeting will be held in Portland, Oregon. Surgeons doing railroad work are invited to write for information to the secretary, Dr. W. T. Cummins, Southern Pacific Hospital, San Francisco.

Handling of Tuberculosis Patients in Los Angeles County Criticized.—On September 4 the Los Angeles *Times* printed an article based on the report of a committee of physicians who had been appointed to make a survey of the manner in which the County of Los Angeles was caring for its tuberculous sick. The article had the following heading and subheadings:

"County Sick Care Scored—Doctors Report Needless Cost—Waste of Lives Charged and Unified Control Favored on Tuberculosis Aid—Larger Nutritional Outlay and Central Observation Urged for Savings."

Some paragraphs from the article follow:

"Lack of system and unified control in the handling of tuberculosis patients in Los Angeles County is wasteful of human lives and is needlessly costing taxpayers many thousands of dollars each year, according to the report of a medical investigating committee forwarded to the Board of Supervisors.

"The committee of medical men was appointed last July by Earl E. Jensen when he was county superintendent of charities. He resigned recently.

"Members of the committee signing the report were Dr. F. M. Pottenger, Dr. Raymond J. Cary, Dr. Carl R. Howson, and Dr. Hugh Edwin S. Bennett.

"Twenty institutions throughout the country were studied by the committee in analyzing the situation.

"'We find,' the report states, 'that the situation is chaotic and believe this is largely attributable to an indefiniteness of procedure and a lack of central control. An absence of system and a lack of proper coordination are in evidence in placing of patients in institutions, the treatment of them while confined therein and in their care in homes after discharge.

"'In various institutions and rest homes other than Olive View which we visited, we found a lack of uniformity in the accommodations provided; the amount of money paid by the county to have no definite bearing on the type of care given; and the medical and dental services to be, in many instances, totally inadequate. A lack of discipline is apparent in many cases.

"'This lack of system is wasteful both in human lives and money, and we believe is needlessly costing the county many thousands of dollars each year.

"'Tuberculosis, as long as it is active, is a disease which requires close medical supervision and treatment.'"

California Dietitians' Association.—A review of the recent meeting of this association gives the following information:

The American people are becoming increasingly health-conscious and are watching their diets more closely.

Even the children of today know about vitamins and understand what these food chemicals do to build sturdy bodies.

These were keynotes of the tenth annual convention of the California Dietitians' Association which was held at the Huntington Hotel in Pasadena recently.

The convention was called to order by Miss Charlotte Sloan of San Francisco, the president, with more than one hundred delegates attending. The convention was welcomed by Dr. Stephen Smith of Pasadena.

In the first address on the program, Dr. Leonard J. Brunie discussed "Arthritis—Its Cause and Cure." . . .

Miss Reeva Hinyan, vice-president of the association, discussed some menus designed to aid in reducing weight.

"The normal diet should average 2,200 calories a day," she said. "A reducing diet of only 900 calories a day has been found effective.

"But the time has passed when we should follow diet fads which prescribe some strange combinations of raw food. The ideal diet included a little of all types of food.

The same principle of all diets, whether normal, reducing, or curative, is moderation.

A Reducing Diet

"Here is a simple breakfast diet for reducing: One-half grapefruit, two eggs, one slice of whole wheat toast, one cup of black coffee.

"Luncheon—Vegetable soup, cottage cheese salad with celery hearts, string beans, a glass of skim milk, fresh fruit or berries without sugar or cream.

"Dinner—A broiled steak or fish, carrots, tomato salad, a glass of skim milk, fresh fruit.

"The diet of a man who works hard physically should average 3,000 to 3,500 calories a day. A growing child should also have more than the ordinary normal diet."

Other speakers at the morning session included Dr. Alfred E. Koehler, Miss Helen B. Anderson of the Scripps Metabolic Clinic at La Jolla, who presided at the luncheon session; Dr. D. D. Comstock and Bruce Whitehead. . . .

The afternoon session, in charge of Mrs. Pauline Clayton Hoyt of the Los Angeles County Hospital, will be devoted to three sections—community education, dietotherapy, and administration.

A public meeting was held at the Pasadena Civic Auditorium, with Dr. F. M. Pottenger presiding and a principal address by Dr. D. W. Sansum on "The Cause and Treatment of Overweight." . . .

American Public Health Association Meeting at Pasadena.—The sixty-third annual session convened at Pasadena on September 3 for four sessions, in which many public health topics were discussed by physicians and sanitarians who came from all portions of the United States to take part in the convention. Excerpts from a newspaper article on one of the four days' session gives an index of the nature of subjects discussed. Quotations on the September 3 meeting follow:

"Except for increased illness among the 'new poor,' the health, especially of children, in this nation, has shown a surprising improvement during the depres-

sion, due to increased vigilance of public health workers, Dr. Hugh S. Cummings, Surgeon-General of the United States, revealed today.

"The Surgeon-General headed an army of delegates to the American Public Health Association's sixty-third annual convention, which formally opened its four-day meeting on September 3. More than fifty nationally known authorities brought tidings of man's latest victories and defeats in his never-ending battle with his ancient and dishonorable foe, the microbe.

" 'If the present tendency of the succeeding waves of civilization to be of longer duration, and of succeeding intervals of barbarism to be shorter, is to continue, it will be through increasing wisdom in control of life rather than by additional control over material things.' This was the declaration of Dr. Haven Emerson, national president of the association, whose address featured the convention's first general session in the Civic Auditorium.

Unessentials Listed

" 'It is unlikely,' he asserted, 'that we shall possess such wealth that all can at the same time have the indulgence and the enduring satisfactions or securities of life. Five unessentials, the use of which we can reduce in order to use the same money for health are: alcohol, tobacco, tea, coffee, and cosmetics!'

"Dr. Emerson noted that so-called 'loathsome' diseases could be controlled, if not eradicated entirely, by provision for the application of new knowledge.

" 'Let us recognize,' he continued, 'the new health problem of diabetes that has grown with the abundance of food and with the advent of devices that save exertion. Let us teach, for the sake of women, the knowledge which will permit them to choose the time and circumstance of their own child bearing.'

"Surgeon-General Cumming revealed in an interview that 'taking the United States as a whole, there now are virtually no epidemic diseases at the present time. Your unfortunate infantile paralysis scare was short-lived due to competent handling, and loss of life was held to a minimum.'

" 'It seems unbelievable, but the fact is that, despite the depression, the nation's death rate is now the lowest in its history, thus indicating good nutrition.'

Cancer Discovery

"A sensational discovery that cancer of the breast is more common among unmarried women was reported by Dr. Emil Bogen of Olive View Sanitarium, Olive View. He announced findings that indicate some forms of this scourge probably are caused by insufficient nursing of children.

"There were 373 deaths from malaria in Florida in 1933, Dr. Henry Hanson, Florida state health officer, asserted. Malaria outbreaks, he said, appear to be connected definitely with rainfall cycles, the point being that more stagnant pools that breed mosquitoes result from extended periods of heavy rainfall.

Reducing Drug

"The rotund delegates flocked to a lecture on the use of dinitrophenol, newly discovered reducing agent, by Dr. M. L. Tainter of Stanford University. 'The use of this drug,' he asserted, 'is increasing to an astonishing degree. More than one hundred thousand corpulent persons and victims of other nutritional disorders are being treated with it.'

"There are more traffic accidents in California because of the large number of motor tourists who are ignorant of local traffic rules, Captain H. L. Barlow of the Los Angeles Police Department pointed out.

"Los Angeles is about the only city in the United States that has no sewage-laden streams or lakes tributary to its water supply, according to R. F. Goudey, Los Angeles sanitary engineer.

Disease Discussed

"Following a symposium on infantile paralysis at the Hotel Huntington, Dr. J. C. Geiger, San Francisco health officer, revealed there are indications that the recent Southern California outbreak, although dormant here, has spread to other states, including Oregon, Washington, Arizona, and British Columbia.

"Los Angeles and Pasadena health experts agreed that studies of the Southern California outbreak indicate swimming pools may be discarded as sources of infection, and that most of those who contracted the disease did so immediately after great physical exertion.

"Dr. John L. Pomeroy, Los Angeles County health officer, reported that twenty thousand Southland children attended Boy Scout, Girl Scout, and other organized vacation camps during the height of the outbreak and that, due to systematic tests, not a single case developed."

Health Director Geiger on "Ambulance Chasing."—The San Francisco *Examiner* of September 25, under the heading "Geiger Offers 'Ambulance Chasing' Cure—Thorough 'House Cleaning' in Medical, Legal Professions Proposed by Health Director," printed the following:

"A thorough 'house cleaning' in the medical and legal professions, instead of the creation of a new commission, was advocated as a cure for 'ambulance chasing' yesterday by Dr. J. C. Geiger, director of public health.

"While agreeing there was merit in the suggestion of Dr. Edmund Butler, chief of the emergency service, an impartial board investigate every automobile accident case, Doctor Geiger felt this could be taken on as an added function of the State Industrial Accident Commission.

" 'There is no need of creating a new commission,' the health officer said. 'What we need more than anything else is honesty all the way through, an investigation conducted by the Medical Society as well as the Bar Association, revealing the names of all who are involved, regardless of whom it hits.

" 'I believe a thorough airing of all the evidence in every automobile casualty case should be made in the courts. No question but some physicians so far forget the ethics of the profession as to color their testimony to suit their client, just as certain lawyers make a business of 'ambulance chasing' in all its ramifications.'

"Doctor Butler said a chief fault of the present system was inequality of jury verdicts on accident claims.

" 'One victim might lose a toe and be awarded $15,000 damages,' he explained, 'while another, actually incapacitated by serious injury, receive only a nominal sum. Under my plan, the jury would fix the responsibility and an impartial commission then set the amount of damages.'

"The proposals are the outcome of the recent report on the year's investigation of 'ambulance chasing' by the California State Bar. Doctor Geiger gave a practical demonstration of 'house cleaning' a year ago during the *Examiner's* exposé of the activity of 'runners' and 'tipsters' in the Emergency Hospital Service, in which Doctor Butler coöperated.

"The result was the dismissal, suspension and disciplining of a number of attaches, as well as board of health rules making contact with 'runners' cause for instant dismissal."

Industrial Accident Commission of California.—The August, 1934, report of Director T. A. Reardon to the Governor's Council contained the following statements concerning the Compensation Department:

The statistics covering the Commission's formal decisions have now been completed, covering the fiscal year ending June 30, 1934. Six thousand, one hundred seventy-two original applications have been filed as against 5,966 during the previous fiscal year, indicating an increase of 3.5 per cent.

The number filed during the last fiscal year is within sixty-three cases of the Commission's all-time high (year ending June 30, 1931). The average time between the filing of an application and the Commission decision during the period was 2.37 months. The Commission decided 6,095 original cases during

the last fiscal year, showing a lag of seventy-seven cases.

In addition to the original decisions, the Commission rendered 3,756 supplemental decisions, giving a total decisions for the fiscal year ending June 30, 1934, in the staggering amount of 9,851.

At the time of the passage of the Federal Bankruptcy Act, compensation was unknown and, of course, not provided for in the Act. As a result of the omission, it was possible for employers to avoid paying compensation claims by the expediency of going through bankruptcy. Congress has now remedied this deplorable situation by passing legislation which not only allows compensation claims, but gives retroactive effect and allows certain priority. The legislation is identified as . . .

As a result of the above, any compensation claimant may, through proper procedure, have his compensation claim allowed by a trustee in bankruptcy and proper priority given, provided steps are taken within the time allowed for the handling of the estate. This is a most important bit of legislation and will affect hundreds of compensation claimants.

Production Source of Illicit Narcotics in Bulgaria.—The League of Nations during recent years has been making an earnest effort to secure international cooperation in an attempt to cut down the supply of illicit narcotics, large quantities of which reach the United States through grape-vine sources. The news dispatch, printed below, is from the San Francisco *Chronicle* of September 25:

Geneva, Sept. 24.—Evidence that Bulgaria has become the center of the illicit traffic in narcotics has been brought before the League of Nations Opium Advisory Committee by Stuart Fuller of the United States State Department, C. P. Sherman of Canada and Russell Pasha of Egypt.

Mr. Fuller told of a chemical known as acetic anhydride, which is useful only in making aspirin, dyestuff, artificial silk, and heroin. He said Bulgaria manufactured none of the first three, and then produced figures showing that world exports to Bulgaria of this chemical jumped from 154 pounds in 1931 to four and a half tons in 1932 and six tons in 1933.

He said that illicit narcotics factories, driven from Turkey, moved to Bulgaria in 1932. He stressed that the six tons of acetic anhydride imported in 1933 would make from two to four times as much heroin as the League had officially estimated the world needed annually for medicines. He asserted acetic anhydride figures were good "barometers" of heroin production.

Mr. Sherman gave figures showing that the production of crude opium in Bulgaria had risen from four tons in 1931 to six and a half tons in 1933.

Russell Pasha gave evidence of ten illicit narcotics factories in Bulgaria, the annual production of which he estimated at three tons.

A Plan to Evaluate Independently Serologic Procedure for the Diagnosis of Syphilis in the United States.—Since the serologic conference at Copenhagen and Montevideo, there has been an increased interest in the relative value of serologic tests for the diagnosis of syphilis. At these conferences the test of only one serologist of the United States was presented for consideration. There are a number of excellent serologists in this country, many of whom have described original modifications of the complement-fixation and precipitation tests for syphilis. It is felt that the tests of these workers merit consideration.

The United States Public Health Service is coöperating with the American Society of Clinical Pathologists in the drafting of a plan to evaluate independently serologic procedure for the diagnosis of syphilis in this country. Briefly, the plan contemplates the collection of specimens of blood from at least 1,000 individuals and the distribution of comparable specimens to the laboratories of serologists who have described an original modification of a complement-fixation or precipitation test for the diagnosis of syphilis. The donors of the specimens will be carefully selected so as to measure both the specificity and sensitivity of the serologic procedure. The sending of specimens to workers at considerable distance from the point of collection will be expedited by the use of the most modern transportation facilities, while the delivery of specimens to nearby serologists will be delayed so as to make the delivery time approximate that for those workers at the more remote points.

A committee of five members, consisting of two specialists in the field of clinical syphilology, two members of the American Society of Clinical Pathologists, and one officer of the United States Public Health Service, will organize the plan of study and, after all laboratory reports have been submitted by participating serologists, will interpret the results on the basis of clinical findings. The collection of the specimens will begin about December 1, 1934, and a number of serologists will be invited to take part in the evaluation scheme.

It is possible that the name of some serologist who has described an original modification of a test for syphilis may have been inadvertently omitted. Any serologist desiring to participate will be extended an invitation upon presentation of suitable proof as to the originality of his modification of a serologic test. A brief description of the plan will also be sent to those workers who may be interested.

Correspondence should be addressed to the Surgeon General, United States Public Health Service, Washington, D. C.

Antivivisectionist Misrepresentation.*—The *Journal of the American Medical Association,* in its issue of August 25, printed the following:

"Just as long as the antivivisectionists permit their activities to be motivated emotionally rather than rationally, they continue to expose the extreme weakness of their arguments. A particularly flagrant example of distortion of fact has come to light in connection with an editorial in a recent issue of *The Journal.* A liberal excerpt of the original statement follows:

"To many it may seem strange that in this day 'laboratory medicine' needs any apologies or defense. Yet not long ago Mendel of Yale University said that there are today not a few physicians as well as other friends of medicine who, although admitting the noteworthy contributions of animal experimentation, nevertheless urge that its dominant importance is passing. Though the pendulum of enthusiasm for a laboratory innovation may at times swing too far, it soon reaches a stable level. In his defense of scientific experimentation in medicine, Mendel made a vigorous plea that devotees of practical medicine and surgery refrain from unwarranted derogatory attacks on one of the best helps of their profession in the past. It is difficult enough, he added, to fight suffering, disease and death without being obliged to fight the ignorance and prejudices of those who would tie the arms of the laboratory worker.

"To a mature individual with ordinary education and the ability to understand clear English, the meaning conveyed by the foregoing quotation is inescapable. Yet in the July, 1934, issue of the *Starry Cross,* the official organ of the American Antivivisection Society, there appears in the column entitled Heard and Read the following comment:

"A surprising editorial in the *Journal of the American Medical Association* (May 26, 1934) quotes L. B. Mendel of Yale University to the effect that 'There are today not a few physicians as well as other friends of medicine who, although admitting the noteworthy contributions of animal experimentation, nevertheless urge that its dominant importance is passing.' This is a great deal for a pro-vivisectionist to admit publicly, and is a welcome indication that the vivisecting profession is being forced to admit, however slowly, that its boosting of vivisection is bringing it into wider and wider disrepute with a consequent disastrous effect upon medical pocketbooks and reputations. It is safe to say that when the profes-

* In this issue of CALIFORNIA AND WESTERN MEDICINE, see also articles on pages 247 and 272.

sion at large does awake from its self-induced delusions regarding the cruel and disgraceful practice of vivisection, it will turn its back upon the once-vaunted 'scientific research' as completely and with the same scorn as that accorded its other fads of yesterday.

"A comparison of the two quotations is sufficient comment on the methods of misrepresentation employed by the antivivisectionist. It provides another example of the tendency of the 'will to believe' to becloud intellectual integrity."

Symposium on Heart Disease.—The Heart Committee of the San Francisco County Medical Society will hold its fifth annual symposium on heart disease November 21 to 22, 1934. Tentative plans include two full-day sessions and two evening sessions.

The course is without fee, and all doctors who are interested in diseases of the heart are welcome to attend. As soon as final arrangements have been completed, programs will be mailed to the doctors on request. Letters should be addressed to the secretary, J. Marion Read, M. D., 490 Post Street, San Francisco.

Joint Meeting of International Board of Hygiene and League for Medical Freedom.—On September 18 about sixty members of the San Diego County Medical Society attended a joint meeting of the International Board of Hygiene and League for Medical Freedom. Following a buffet luncheon, the members listened to an interesting scientific program by speakers of prominence. Among the out-of-town guests were Dr. G. Kita from Japan and Dr. G. Miro from Mazatlan, Mexico. Several local members expect to attend the next meeting of the I. B. H., which will be held in Mexico City in December.

Meeting of Radiological Society of North America. The Radiological Society of North America will hold its next annual meeting at the Hotel Peabody, Memphis, Tennessee, December 3 to 7, 1934. The medical profession is cordially invited to attend. Further information may be obtained by addressing the secretary-treasurer, Dr. Donald S. Childs, 607 Medical Arts Building, Syracuse, New York. William E. Costolow and Robert R. Newell are counselors for California.

CORRESPONDENCE

Subject of following letter: More information concerning "needy blind" procedures.*

Pasadena, September 17, 1934.

To the Editor:—I have read Dr. Dennis V. Smith's letter in the September issue of California and Western Medicine, relative to your editorial in the August number of California and Western Medicine, on misappropriation of tax funds for aid of blind persons amenable to rehabilitation, with considerable interest and approval.

For the past twenty-five years I have been engaged in an eye practice in Pasadena, and have had occasion frequently to observe instances of just such injustice.

Many of the patients who come to me for examination, and to have blanks filled out for blind pensions, are excellent risks for rehabilitation.

I wish to endorse the contention that where no obstacle exists, except a patient's obstinacy, to their recovery of sight by operation, such persons should be refused blind pensions until the result of operation or treatment has proved unavailing. . . .

Very sincerely,

J. Ross Reed.

* See August editorial (page 128) and Doctor Smith's letter in September issue (page 212).

Subject of following letter: Comments by Dr. Edward Jackson of Denver on "needy blind" medical reports.†

To the Editor:—Thank you for calling my attention to the article in the August number of California and Western Medicine. Enclosed I will send you a copy of the blank, on which the oculist's report is submitted to the Colorado State Commission for the Blind. There is some value in calling attention of the examiner to the different portions of the eye he is expected to report upon; and asking the direct question as to whether the blindness can be removed by treatment. In Colorado we try to have reports on each case, from a physician known to be competent, to examine and report upon the eyes. But in some counties there is no such person to whom the applicant can be referred. Sometimes they are brought to the Colorado General Hospital for an examination.

As to a definition of blindness, adopted by the House of Delegates of the American Medical Association. This was drawn up by a committee, composed of Dr. Harry Gradle of Chicago, Dr. A. C. Snell of Rochester, New York, and myself. It was submitted to the Section on Ophthalmology, and unanimously adopted by the Section.

California appears to be repeating the experience of Ohio, where the provision for the blind was so liberal that the law was repealed, and altered before it was again passed. Cordially yours,

Edward Jackson.

† On this subject, see August issue, page 128; September issue, page 212; also letter on this page from Dr. Reed.

NATUROPATHIC AND CHIROPRACTIC INITIATIVES

Arguments Against Chiropractic Initiative (No. 9) and Naturopathic Initiative (No. 17) as printed in State Leaflet 14636, which will be sent to Electors of the State of California

Every registered voter of California has or will receive from the Secretary of State a booklet containing the full text of proposed amendments to the constitution, propositions and proposed laws, with arguments for and against the same, which will appear on the November 6 ballots.

In the preliminary draft which has come to us, the Chiropractic Initiative (No. 9) is printed in full text on page 13 of Part II, the arguments against its passage being printed on pages 15 and 16 of Part I.

The text of the Naturopathic Initiative is printed on page 32 of Part II, the arguments against its passage being printed on pages 15 and 16 of Part I.

It behooves members of the California Medical Association to read the above and then to decide upon their obligations in the premises. In this connection, the attention of readers is called to some editorial comments in this issue (page 269).

For the convenience of members and for purposes of easy reference, the arguments against these unnecessary legislation, which will be found on the November 6 state election ballots, are here reprinted.

Read not only what prominent members of the legal profession say of this proposed legislation, but also what the better class of chiropractors have to state in regard thereto.

Follow up this reading by calling the attention of as many fellow citizens as possible to these measures (Nos. 9 and 17), urging them to coöperate by using their best efforts to defeat these proposed laws which menace public standards and the public weal.

Initiative No. 9—Chiropractic

Chiropractic. *Initiative.* Amends Chiropractic Act. Creates State Chiropractors' Association; provides for organization, government, membership, powers and duties thereof; etc., etc. . . .

Argument Against Initiative Proposition No. 9

Argument: The proposed amendment of the Chiropractic Act is not only useless legislation, but is one of the most dangerous proposals ever submitted to the voters of California.

In 1922 the people enacted the existing chiropractic law by initiative. It is a good law. It is adequate in its provisions for the purposes of such law. It is generally considered the best chiropractic law in the United States. It provides for high and adequate standards of professional education.

The proposed amendment destroys existing standards and opens the door to fraud and racketeering in this respect.

The existing law gives to chiropractors every right that could be asked for in the honest practice of chiropractic. The proposed amendment would authorize practices as chiropractic which are in no sense chiropractic or related to it, and would encourage quackery in general and abortionists in particular, all at the expense of the sick people of the State of California.

The present law provides that the chiropractor may "practice chiropractic" and in so doing may also "use all necessary mechanical and hygienic and sanitary measures incident to the care of the body." Surely nothing more could be desired in that connection. The proposed amendment seeks to authorize the use of dangerous drugs, anesthetics and the indiscriminate practice of obstetrics, none of which are a part of the practice of chiropractic.

The existing law amply empowers the State Board of Chiropractic Examiners in any proper business "designed to ascertain the fitness of the applicants to practice chiropractic."

The proposed amendment would grant unheard-of powers to the State Board of Chiropractic Examiners—powers by which the licenses of every chiropractor, who failed to please the board, could be revoked, upon any one of sixteen "grounds," set forth in Section 30 of the proposed amendment. This section violates every principle of democracy and sets up a dictatorship as absolute as exists in any government in Europe today. Further, the amendment would disfranchise the large majority of chiropractors in the organization set-up with its several districts in the State.

The present law requires that chiropractic schools or colleges, desiring to qualify their graduates for examination for licensure, shall be incorporated, which in connection with another special law regulating the incorporation of educational institutions, has been effective in ridding California of many fly-by-night schools and has prohibited graduates from such schools in other States from being licensed to practice chiropractic in California.

The proposed amendment destroys these safeguards, making it unnecessary for schools to be incorporated and leaves the entire matter within the discretion of the board. We believe it is bad policy to give such unlimited power to boards which in the past, we regret to say, have not proved themselves at all times either capable or trustworthy in the execution of such unlimited powers.

In conclusion, we urge the friends of chiropractic and the friends of good government, who desire to see the sick scientifically served and government honestly administered, to vote "No" on this amendment, which was born of ignorance and avarice, and if enacted into law would reduce a valuable service to the people of this State to a conscienceless imposition upon the sick and suffering.

CALIFORNIA CHIROPRACTIC ASSOCIATION
OFFICERS.
James C. Tobin, D. C.,
State President.
Selma M Giese, D. C.,
State Secretary.
H. A. Rockwell, D. C.,
Chairman State Legislative Committee.

* * *

Argument Against Initiative Proposition No. 9

This proposed act attempts to do at least two things, either of which demands its defeat.

1. It creates, for the first time in California, in the State Chiropractic Association and its board of governors elected by the members of that association, a self-governing specially privileged group, whose actions are completely removed by the act from any control by the Governor or the Legislature of the State of California or by the courts except in matters of jurisdiction. The only possible means by which the people of California can exercise any control or discipline upon the "State Chiropractic Association," if this act is passed, is another initiative act. The great expense and uncertainty attendant upon this form of control means that, practically, control is impossible.

The statement of its proponents that it is similar to the State Bar Act under which the members of the State Bar elect a board of governors is untrue. The State Bar Act was passed by the Legislature and can be and has repeatedly been amended by the Legislature and all of the fundamental acts of the board of governors of the State Bar Association are subject to approval by the Supreme Court of California.

2. The act grants rights and privileges to a group of practitioners whose training, as required by the act and regardless of any statements by its supporters, is far below that heretofore deemed necessary by the Legislature for those to whom it granted these same rights and privlleges—the physicians and surgeons.

Education and equal training should demand equal rights and privileges to treat the sick. But the giving of these rights to inferiorly educated and trained practitioners endangers individual and public health, and these rights exercised in tax-supported institutions and under the workmen's compensation insurance laws will mean increased costs to already burdened taxpayers and to industry because of longer and greater disabilities incurred through inferior care of the sick and injured so treated.

Furthermore, the act is unnecessary because the chiropractors now have their own licensing board, set up by the present State Chiropractic Initiative Act (passed in 1922), the members of that board being appointed by the Governor. This proposed act is purely an attempt by certain chiropractors to secure for themselves a complete chiropractic autocracy and rights and privileges to treat the sick by means to which their standards of training do not entitle them. The Legislature in its wisdom would not grant them such rights, so they are attempting, in the hurly-burly of a great election, to have the people unwittingly and practically irrevocably do so.

Do not begin to establish self-governing and irresponsible special groups in California or to lower the standards required to whose care California entrusts without limit or reservation its sick and injured people.

Vote "No" on this initiative.

R. HOLTLEY MYERS,
834 Rome Drive, Los Angeles
I. B. DOCKWEILER,
2321 South Figueroa Street, Los Angeles.

* * *

Initiative No. 17—Naturopathic

NATUROPATHIC ACT. *Initiative.* Creates Naturopathic Association of California, a public corporation; provides for its organization, government, membership and powers; regulates practice and licensing of naturopathy; etc. etc. . . .

* * *

Argument Against Initiative Proposition No. 17

Argument: The proposed Naturopathic Act is so utterly objectionable as a means of attempting to regulate the various systems of so-called practices that space here prohibits adequate condemnation.

Most of the argument submitted against the proposed chiropractic amendment applies equally to the Naturopathic Act. They both, or either of them, would repeal the Chiropractic Law of California. The Naturopathic Act is sponsored almost entirely by persons already licensed as chiropractors in California. The licenses they now hold give them every right that the honest practice of chiropractic would suggest. If the proponents of this act honestly believe in their science and profession, they should not require additional rights acquired through legislation, instead of education.

The proposed Naturopathic Act places no restriction on the practices of those who may be licensed under it, irrespective of the nature or extent of their education in the various practices set forth therein. It is obvious that should this act become law, it would result in an orgy of unscientific, futile and dangerous experimentation upon the sick people of California.

There is no good or logical reason for the enactment of such an act as the proposed Naturopathic Act. At the present time the Medical Practice Act provides for the licensing and regulation of all character of drugless practices, such as would be authorized under the proposed Naturopathic Act. Also the Medical Practice Act provides for the licensing of osteopaths and the several branches of medicine, and finally, the Chiropractic Act provides for the licensing and regulation of the practice of chiropractic. It is, therefore, obvious that the enactment of the proposed Naturopathic Act would lead only to confusion, needless expense, and, most deplorable of all, would result in low-grade and unethical practice in every field of health effort in the State of California.

Existing laws are adequate for the licensure and regulation of every known physical and material practice in the entire field of health effort today.

Under the provisions of the proposed Naturopathic Act, it is not required that the licentiate thereunder shall necessarily have had any education or experience in any of the particular practices, other than chiropractic authorized by the licenses issued thereunder.

The proposed Naturopathic Act is vicious and dangerous and, like the chiropractic amendment, was born of "ignorance and avarice," and, therefore, we would urge every honest and intelligent citizen of the State of California to vote "No" on this monstrous proposal.

CALIFORNIA CHIROPRACTIC ASSOCIATION
OFFICERS.
James C. Tobin, D. C.,
State President.
Selma M. Giese, D. C.,
State Secretary.
H. A. Rockwell, D. C.,
Chairman State Legislative Committee.

Argument Against Initiative Proposition No. 17

This act should be overwhelmingly defeated for many reasons, space limiting discussion here to three only.

It creates the Naturopathic Association of California and its governing body, the board of governors, elected by and from among, the licensees of this board.

It then (Sec. 3) completely removes this association from all control by the Governor, or the legislature, or the courts, except in jurisdictional matters, and puts into the hands of the board of governors the absolute autocratic control of the entire practice of "naturopathy," so-called, and its practitioners.

The only possible way that the people will ever have to exercise the slightest control over "naturopaths" to whom the act gives (Sec. 63) "all of the rights and privileges of any and all other practicing physicians of any school or class or division in the treatment of any and all diseases, injuries, deformities"—and equal rights with all physicians in all partly or wholly tax-supported institutions and under the "workmen's compensation insurance" laws, will be by future initiative acts. The expense and uncertainty of an initiative act makes any control over a special group almost impossible.

The statement that this act is similar to the State Bar Act under which lawyers elect a board of governors, is wrong. The State Bar Act was passed, and can be and has been repeatedly amended, by the Legislature, and all of the fundamental acts of the board are subject to approval by the Supreme Court.

The act ostensibly sets up educational requirements for licenses, but puts absolute control of them under the autocratic board of governors and, regardless of any proponent's assertions, even upon the most favorable basis of comparison these requirements are less than 60 per cent of those demanded by the State for regularly licensed physicians.

It further (Sec. 62) copies only nine of the twenty-three definitions of "unprofessional conduct" cited in the State Medical Practice Act and limits the punishment for any of these nine to suspension of the "naturopathic" license for one year, regardless of previous offenses.

Since among the fourteen definitions omitted are (1) procuring or offering to procure an abortion; (2) wilfully betraying professional confidences of patients; and (3) habitual intemperance or excessive use of narcotics, it is evident that proponents of the act intend to have little discipline and to protect their own misbehaving naturopaths, and not the public.

This act is

1. Unnecessary, because drugless practitioners can now be licensed under existing law;

2. Vicious, in that it is an attempt by a special group of inferior education seeking special privilege, to secure an autocratic self-government new to California, to practically remove itself from any control by the people and to obtain rights and privileges heretofore granted only to those meeting the highest requirements set by the Legislature; and

3. Dangerous to public health and to the sick of California in that it will loose upon the sick and injured a horde of poorly trained "naturopaths' with all of such rights and privileges.

Vote "No" on this measure.

R. HOLTLEY MYERS,
834 Rome Drive, Los Angeles.

I. B. DOCKWEILER,
2321 South Figueroa Street, Los Angeles.

PRESIDENT FRANKLIN DELANO ROOSEVELT'S TRIBUTE TO SCIENTIFIC MEDICINE*

Text of the Mayo Presentation Address

I hope that the people of Rochester will not feel limited in their pride of possession when the nation which I have the honor to represent claims the right to call Doctor Will and Doctor Charles by the good word "neighbor." You are beloved at home and abroad, and a world deeply in your debt gives you inadequate returns in external honors and distinctions. But your true distinction is in the simple fact that you have put men's sense of brotherhood and interdependence into a setting and have given it a new meaning.

For fifty years you have given tireless, skillful and unselfish service here in this state and city. These fifty years, the span of your medical practice, have covered probably the most remarkable period in the history of science. You have seen practically all of modern medicine and surgery come into being. The rise of research, dating back to the days when you began your practice, has revolutionized the diagnosis, prevention and treatment of disease.

The development of the branches of this science has revolutionized not only the science of medicine, but the entire field of effort that we sometimes call public welfare. You have seen surgical technique become one of the finest of all the arts of man. You have seen the development of the science of public health, which has brought the gospel of health to the school and clinic. You have seen the growth of hospitals, the creation of foundations for medical research, and a resolution in the teaching of medicine. You have seen isolated clinics come to be part of great universities, an association resulting in the enrichment of both.

But, despite the progress that you have seen and that you have helped to accomplish, the restless spirit of science prompts you to see new visions of achievement. As you have pointed out so often in your predictions of what humanity may expect from medical science in the future, progress is only at its beginning. In the further development of the curative art, in the discovery of new means for the prevention of disease, in the creation of methods by which all of the people may be made aware of the knowledge of hygiene and public health developed in the laboratory clinic, your vision offers promise of a greater nation and a happier people.

You have helped to give to the medical profession a unique place in the community and the nation. By reason of his special opportunities, the physician has the occasion to perform a service in his community far beyond the bounds of his own professional duty. His infinitely complex relationship with the people of the community enables him to lead them in standards of ethical right which may profoundly affect human conduct in general.

For this reason the science of medicine comes to concern itself with many things besides the healing of the sick. It has been broadly interpreted as a major factor in the science of human welfare. The problems of disease and the circumstances related to it are to the science of modern medicine only the sequel of a long train of social cause and effect. Medicine has taught us how important it is to look beyond the result to the cause, not only of human sickness, but of those social disorders out of which individual difficulties necessarily arise.

Those of us who are concerned with the problems of government and of economics are under special obligation to modern medicine in two very important respects. In the first place, it has taught us that with patience and application and skill and courage it is possible for human beings to control and improve conditions under which they live.

It has taught us how science may be made the servant of a richer, more complete common life. And it has taught us more than that, because from it we have learned lessons in the ethics of human relationship—how devotion to the public good, unselfish service, never-ending consideration of human needs, are in themselves conquering forces.

Democracy looks to the day when these virtues will be required and expected of those who serve the public officially and unofficially. Modern medicine has set an exalted example. It has shown the way for us all.

You whom we honor today have rendered the highest form of patriotic service during the battles of the World War, but, even more than that, you deserve the nation's thanks for the national service that you have rendered throughout your lives.

---

* The tribute given by President Franklin D. Roosevelt to Doctors William J. and Charles H. Mayo, each an ex-president of the American Medical Association, was extended through them to the medical profession of the United States. On that account this appreciation of modern medicine by the President of the United States, in his Rochester address of August 8, is here reprinted.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VII, No. 12, October, 1909

From Some Editorial Notes:

A Victim to Duty.—With the remarkable successes in aerial navigation, comes the news that the Wright brothers are to begin suit against their rival, Curtiss, for infringement of patent. The statement is of more than passing interest because it brings to mind the fact that not only fame and honor attend discoveries in the mechanic-arts, but great wealth as well. Mechanics furnishes every incentive to the investigator. How different is it in the field of medicine, where he who is not satisfied to follow in beaten paths receives but scant assistance in hewing out new trails. . . . In May of this year a Californian sacrificed his life in the pursuit of duty. Dr. William Martin Wightman of the United States Public Health and Marine Hospital Service died at Guayaquil, Ecuador, of yellow fever. . . .

* * *

Ground Squirrels and Plague.—The work of the United States Public Health and Marine Hospital Service in uncovering and outlining the focus of squirrel plague in California marks one of the greatest advances which has been made by preventive medicine in the last decade. During recent years each summer has been marked by the occurrence of one or two human plague cases in Contra Costa and Alameda counties. . . .

From an article on "Eye Symptoms in Intracranial Complications Following Middle-Ear Suppuration" by Vard H. Hulen, A. M., M. D., San Francisco.

The above subject allotted to me in this symposium if followed fully and to its logical conclusions would result in hundreds of pages, hence I shall only be able in my few moments to allude to the important eye changes often revealed and to the necessity of ocular examinations in these serious cases. It is hoped this supplement, as it were, to the broader subject of symptomatology treated here by another member, may be justified. . . .

From an article on "Indications for Operation in Chronic Purulent Otitis Media" by Edward C. Sewall, M. D., San Francisco.

How is to be decided the question when and upon what patients are we to operate radically in chronic purulent otitis media? Since the work of Schwartze, and more particularly of Stacke, which began a new era in the treatment of purulent ear disease, surgeons, because of the multitude of cases and statistics, have found out the worth of the measure and its limitations. . . .

From an article on "The Different Operations for Chronic Suppuration of the Middle Ear" by H. Bert Ellis, M. D., Los Angeles.

The treatment of chronic suppuration of the middle ear certainly does not present a brilliant field for medicine or surgery. Local treatment of a medical character frequently stops a discharge which has existed months or even years, but the suppuration is more than likely to return with the first severe so-called "cold in the head" or on exposure to untoward atmospheric conditions. This fact has caused a reaction from local therapeutic measures to surgical interference. . . .

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and new members.

(Continued in Front Advertising Section, page 17)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

By Charles B. Pinkham, M. D.
Secretary-Treasurer

Results of Board of Medical Examiners' Examination, Los Angeles.—Charles B. Pinkham reports results of the written examination held in Los Angeles on July 24 to 26 inclusive, 1934. The examination for physicians and surgeons covered nine subjects and included ninety questions. An average of 75 per cent is required to pass. Ninety-four graduates of medical schools wrote the examination, including several from foreign countries.

The highest mark (93 7/9) was made by a graduate of St. Louis University School of Medicine, Missouri.

Eighty-eight physician and surgeon applicants passed, and six failed.

The following is a list of successful applicants, who have been issued medical licenses to practice in California:

Charles Norman Abbott, Ontario, College of Medical Evangelists.
William Lanier Adams, Jr., Los Angeles, University of Southern California School of Medicine.
Herbert Jerome Andrews, Los Angeles, College of Medical Evangelists.
Harry Edwin Barker, Ventura, Stanford University School of Medicine.
Gaston James Baus, Los Angeles, University of Southern California School of Medicine.
Gordon Bruce Beckner, Los Angeles, College of Medical Evangelists.
John Whitney Beeman, Los Angeles, College of Medical Evangelists.
Everett Eugene Bennett, Los Angeles, College of Medical Evangelists.
Jerome William Bodlander, Los Angeles, St. Louis University School of Medicine of Missouri.
Sheldon Seymour Brownton, Los Angeles, Washington University School of Medicine.
Richard Alvin Chance, Los Angeles, College of Medical Evangelists.
Edwin Morey Chase, Patterson, University of Southern California School of Medicine.
Samuel Ching, Los Angeles, Collge of Medical Evangelists.
Rea Forry Chittenden, Los Angeles, University of Southern California School of Medicine.
Ward Cleveland Curtis, Knoxville, Tennessee, Medical College of Virginia.
Russell Calvin Darby, Azusa, College of Medical Evangelists.
Delbert Henry DeSmet, San Francisco, Stanford University School of Medicine.
Robert Reeve Dockweiler, San Francisco, Harvard University Medical School of Massachusetts.
George Hall Douglass, Los Angeles, University of Southern California School of Medicine.
Theodore Martin Ebers, Los Angeles, University of Nebraska College of Medicine.
Hertha Ehlers, Los Angeles, College of Medical Evangelists.
J. Clough Frudenfeld, Detroit, Michigan, State University of Iowa College of Medicine.
Milton Goldman, Los Angeles, Rush Medical College.
Ross Adams Goodcell, Los Angeles, University of Southern California School of Medicine.
Arthur Abraham Gould, Los Angeles, University of Toronto Faculty of Medicine, Canada.
Mary Lossie Griset, Los Angeles, University of Southern California School of Medicine.
Glen Robert Halverson, Santa Barbara, College of Medical Evangelists.
Van Rensselaer Hamilton, Los Angeles, University of Southern California School of Medicine.
Robert King Harker, Los Angeles, University of California Medical School.
Max Dixon Hendricks, Los Angeles, University of Southern California School of Medicine.
Norman Glenn Hickey, Los Angeles, College of Medical Evangelists.
Jack Hoekzema, Compton, Rush Medical College.
Leland Richmond House, Los Angeles, College of Medical Evangelists.
Jones Russell Hughes, Los Angeles, University of Pennsylvania School of Medicine.
Elinor Randolph Ives, Los Angeles, Cornell University Medical College.
Barney Noboru Iwanaga, Los Angeles, College of Medical Evangelists.
Berthella Jarvis, Huntington Park, College of Medical Evangelists.

* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

(Continued in Front Advertising Section, page 18)

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Pathology
DAVID A. WOOD, M. D., Director of Laboratory

(Continued from Page 31)

of literature lists on which individual needs may be checked and signed for, to be delivered after the Fair.

There will be a large battery of shadow-boxes, used to illustrate various phases of departmental activities, including film portraiture of the progress of tuberculosis and a similar presentation of silicosis.

As in other years, the assistant director, Mr. James E. Bauman, will have charge of the display, which will be in the same place as last year, the entire northwest corner of the Manufacturers' Building, No. 53 on the plat. Mrs. Mary S. Cartwright, health lecturer, will have charge of the distribution of literature, and there will be a staff of physicians, nurses, and other attendants on duty at all times while the Fair is open.

As in other years, also, Dr. Finley Van Orsdall will be in medical charge of first-aid activities at the Red Cross station, and Dr. W. P. Johnson will supervise the 4-H Club health examinations. These are a convincing illustration of the necessity for regular health examination of any individual at frequent intervals.

The entire exhibit is framed to give the Ohio public first-hand information on what the State Department of Health means to Ohioans, what it is doing for them, and the beggarly cost involved in the conservation of the state's most important asset—its men, women and children.—*Ohio Health News.*

True Concept of Cleanliness.—With the lessons of recently seasonal recurrence of typhoid fever in the Hardin County onion fields in mind, as the few cases which developed were due chiefly to neglect of the simplest sanitary precautions, the following is quoted from a recent issue of the Mysore *Arogya,* monthly bulletin of the Mysore (India) State Department of Health, in the belief, on the part of this editor, that the actual relations of cleanliness, sanitation, and health have never been more succinctly set forth. Here it is:

Cleanliness is the heart and soul of sanitation, and sanitation is a *sine qua non* of public health. Environmental cleanliness, personal cleanliness, soil cleanliness, and, in fact, cleanliness in everything, is essential for maintaining health and preventing disease. By cleanliness is meant not merely physical and esthetic cleanliness, but biological cleanliness which means freedom from disease germs. Unfortunately, nature has not endowed human beings with a sixth sense, the microscopic eye. We are unable, therefore, to perceive the harmful germs with our unaided eyes. What appears to be bright and neat, we take for granted is clean. This is, however, our daily experience with the food we eat, water we drink, clothes we wear, and utensils we use. It is an irrefutable fact that cleanliness, in the biological and true sense, offers sure protection against diseases.—*Ohio Health News.*

S. M. A. West Coast Company.—H. Mabry Swartz, manager of the S. M. A. West Coast Company during the past ten years, has been transferred to Cleveland, where he has been appointed director of representatives. Herbert F. D'Sinter will take over the S. M. A. duties in northern California, and Dr. I. R. Allen in southern California.

United States Milk Consumption Should Be Increased Seventy Per Cent, Borden Scientist Tells American Public Health Association Meeting.—Milk production and consumption in the United States ought to be increased by about 70 per cent, Dr. James A. Tobey, director of health service of The Borden Company, New York City, told members of the American Public Health Association who assembled in Pasadena, California, from September 2 to 6 for that organization's sixty-third annual meeting.

Doctor Tobey's address on "Nutrition and Health and the Price of Milk" was delivered before the As-

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sociation's food and nutrition section. Doctor Tobey, a well-known writer on health subjects, is author of "Milk, The Indispensable Food," co-author of "The Most Nearly Perfect Food" and member of the American Public Health Association's committee on milk and dairy products.

"Despite the fact that modern science has demonstrated in a long series of brilliant investigations that pure milk is indispensable to adequate human nutrition, and that the dietary qualities of dairy products surpass those of practically all other foods, the average American consumes too little milk," Doctor Tobey asserted. "In 1933, for example, the annual per capita consumption of fluid milk and cream in this country was only 38.8 gallons, or 0.85 of a pint, a day.

"Scientists who have worked out the mass food requirements of the American people on a careful nutritional basis declare that even in a restricted diet for emergency use, 155 quarts, or 38.75 gallons, of milk are necessary for each person in the course of a year. Today our people are, therefore, barely living on a restricted and meager milk diet.

"For an adequate diet at minimum cost, not less than 260 quarts, or 65 gallons of milk or its equivalent in other dairy products is advised. For an adequate diet at moderate cost, or for a liberal diet, the per capita figure is set at 305 quarts, or 76.25 gallons of milk annually."

The favorable influence on healthful longevity of the regular consumption of optimum amounts of pure milk is now as well established as is the unfavorable effect on infant and general mortality of impure and contaminated raw milk, Doctor Tobey declared. He said that investigations in Scotland had demonstrated that children who have extra milk either pasteurized or raw, gain in height and weight over those who do not. A study conducted by British medical officers in Africa showed that the males of a milk and meat-eating tribe were taller, heavier and had greater

(Continued on Next Page)

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An easy-spreading lenitive ointment recommended as a local application to denuded and painful lesions of the skin; an ideal antiseptic lubricant for easy entrance to any orifice; a soothing protection to mucous membranes.

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Each lot tested bacteriologically according to Department of Agriculture, Drug and Food Control, "Methods of Testing Antiseptics," (George F. Reddish, Ph.D.), Jour. Lab. and Clin. Med., April, 1929, by Mona E. Bettin, M.D., Pathological Laboratory, Los Angeles.

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(Continued from Preceding Page)

muscular strength than the males of another tribe that lived on vegetarian fare and no milk.

"The prescience of the public regarding milk is one of the outstanding factors affecting its consumption," the speaker said. "Better education of the people as to the merits of milk tends to bring about gratifying retention of milk and dairy products in the diet even in times of depression.

"Despite the fact that the most sapient authorities on nutrition, including government officials, professors, and physicians, universally advocate the expenditure of from one-fifth to one-third of the family food budget on milk, the actual expenditure for this indispensable food is now only about one-tenth of the average American food budget. The fraction now allotted to milk could be doubled without increasing the daily expenditure for food.

"Where fluid milk is unavailable, or the supply is of questionable purity, the public can always secure the concentrated milks, including the evaporated, powdered, and condensed, the nutritive properties of which are equivalent to pasteurized fluid milk."

Two Psittacosis Cases Reported. A suspected case of psittacosis in the wife of an aviary and bird-store owner in Oakland was reported. The patient was taken ill with symptoms of influenza late in June. After ten days, typhoid fever was suspected, but laboratory investigations proved negative for typhoid. About August 1 psittacosis was suspected and laboratory examination on the thirty-seventh day of illness proved positive for psittacosis. The patient had been in contact with parrakeets in the aviary, as well as with birds which were brought to the store for boarding, bathing, and treatment. All parrakeets in the aviary were taken to the laboratory for examination.

The health officer of Berkeley also reported a suspected case of psittacosis in a woman who had purchased parrakeets June 10 from an aviary in Oakland. One of the birds died about a week before the woman was taken ill. On the thirteenth day of her illness the laboratory examination proved positive for psittacosis.

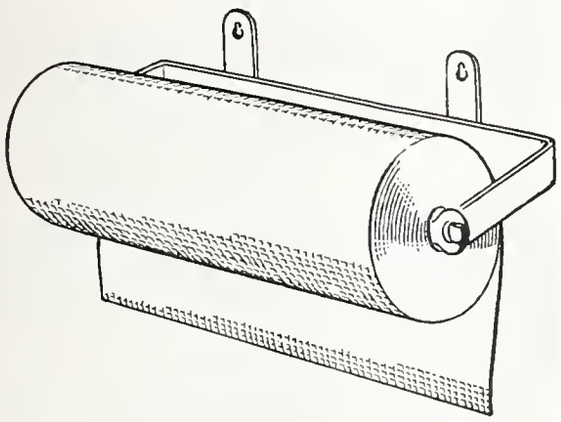
(Continued on Page 38)

3 KLEENEX TOWELS for LESS than a PENNY

Here's real economy in a quality towel service

These Kleenex absorbent hand towels give your office the towel service your patients want. And you save money, because your laundry charge alone is much higher than this low price.

Kleenex towels are softer than any towel you have ever used. They are pure white, clean and sanitary; and add immensely to the appearance of your office. Made of cellu-cotton, they absorb water like a sponge.



75—4-ply towels, 10 x 12, in each roll.

Packed 12 rolls to the case.
$2.95 per case, 24½c each

Trim-looking, chromium plated holders for only 15c.

At this price it is true economy to use these towels for any cleaning purpose that comes to hand.

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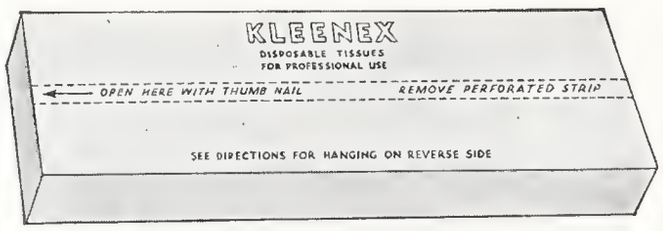
Your patients buy Kleenex for their own use at home, and expect to find it in use in your office. A trial will convince you that the large (towel size) 15 x 18-inch tissue is economical to use and unsurpassed in performance.

Kleenex is manufactured and packed under the most rigid supervision, and reaches you clean and sanitary. You will find it softer yet stronger than any tissue or towel you have ever used. Where the first need is absorbency nothing does the job like Kleenex.



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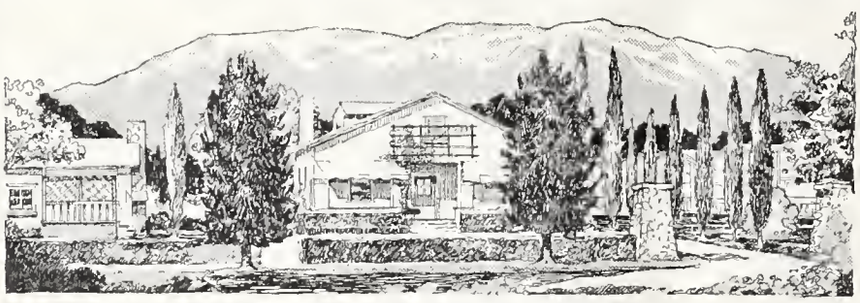

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(Continued from Page 36)

The remaining parrakeet, as well as all such birds in the Oakland aviary—consisting of 124 parrakeets—were taken to the laboratory, where it was found that they were heavily infected with psittacosis. Further investigation developed that these parrakeets came from the same aviary where the Oakland woman had contracted psittacosis.

The methods of quackery are merely a theft from the most ancient phases of folk-medicine.—Sudhoff.

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2. Patients are taught how to secure an arrest of their disease, how to remain well when once the disease is arrested, and how to prevent the spread of the disease.

3. Patients have the advantage of modern laboratory aids to diagnosis and of all modern therapeutic agencies.

4. The climate of Colfax enables the patient to take the cure without discomfort twelve months in the year. We believe climate is secondary to medical supervision and rest, but the fact remains that it is easier to "cure" under good climatic conditions than where these climatic conditions are absent.

5. Colfax is accessible. It is on the main line of the Ogden Route of the Southern Pacific R. R. and has excellent train service. It can be reached by paved highway, being on the Victory Highway, with paved roads all the way to Colfax.

For further information address

ROBERT A. PEERS, M. D., *Medical Director*
Colfax, California

NEXT ANNUAL SESSIONS

California Medical Association, Yosemite National Park, May 13-16, 1935
American Medical Association, Atlantic City, New Jersey, June 10-14, 1935

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VOLUME 41
NUMBER 5

NOVEMBER · 1934

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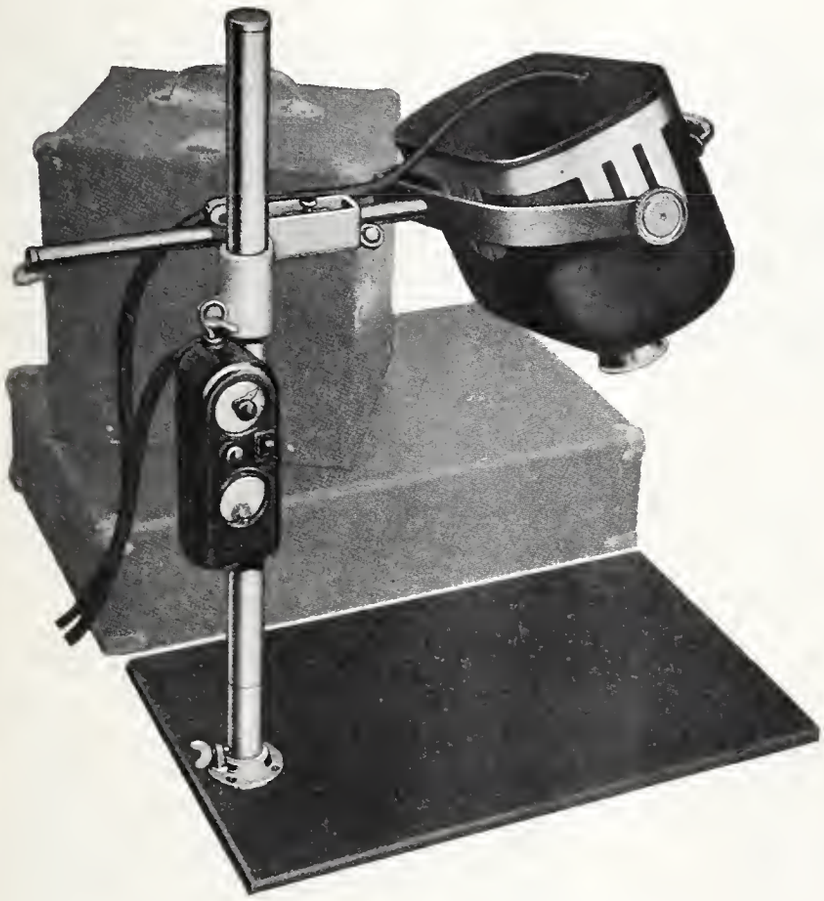

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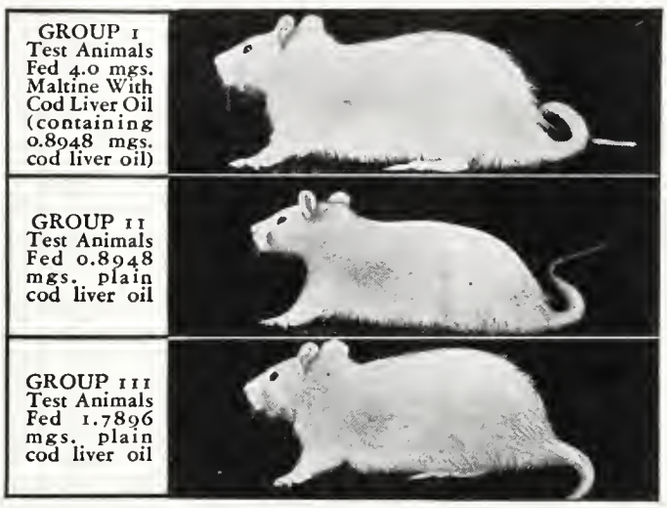

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Miscellaneous California Medical Organizations

State of California Department of Public Health

San Francisco—State Office Building, McAllister and Larkin Streets. UNderhill 8700.

Sacramento—State Office Building, Tenth and L Streets. CApital 2800.

Los Angeles — State Office Building, 217 West First Street. MAdison 1281.

President, Howard Morrow, San Francisco.

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Board of Medical Examiners of the State of California

San Francisco, Rm. 512, 450 McAllister St.

Los Angeles, 812 Associated Realty Building 510 West Sixth Street

Sacramento, 420 State Office Building

President, William R. Molony, Sr., Los Angeles.

Secretary, C .B. Pinkham, Room 512, 450 McAllister Street, San Francisco.

Southern California Medical Association

President, H. Douglas Eaton, 811 Medical Office Building, 1136 West Sixth Street, Los Angeles.

Secretary, Robert W. Langley, 1002 Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles.

California Northern District Medical Society

President, Dan H. Moulton, Chico.

Secretary, P. B. Gallegos, 242 North Sutter Street, Stockton.

Pacific Roentgen Club

Chairman, Lowell S. Goin, 1930 Wilshire Boulevard, Los Angeles.

Secretary, L. H. Garland, 450 Sutter Street, San Francisco.

The Public Health League of California

Executive Secretary, Ben H. Read. San Francisco Office, 450 Sutter Street. Los Angeles Office, 438 Chamber of Commerce Building.

Better Health Foundation

President, Reginald Knight Smith, 490 Post Street, San Francisco.

Chairman, Executive Committee, Walter B. Coffey, 65 Market Street, San Francisco.

Treasurer, John Gallwey, 1195 Bush Street, San Francisco.

Secretary, Celestine J. Sullivan, 490 Post Street, San Francisco.

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Hospitals and Sanatoriums

The Institutions here listed have announcements in this issue of California and Western Medicine. For Index, see advertising page 8.

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CALIFORNIA SANITARIUM
For Treatment of Tuberculosis
Belmont, California

CANYON SANATORIUM
For the Treatment of Tuberculosis
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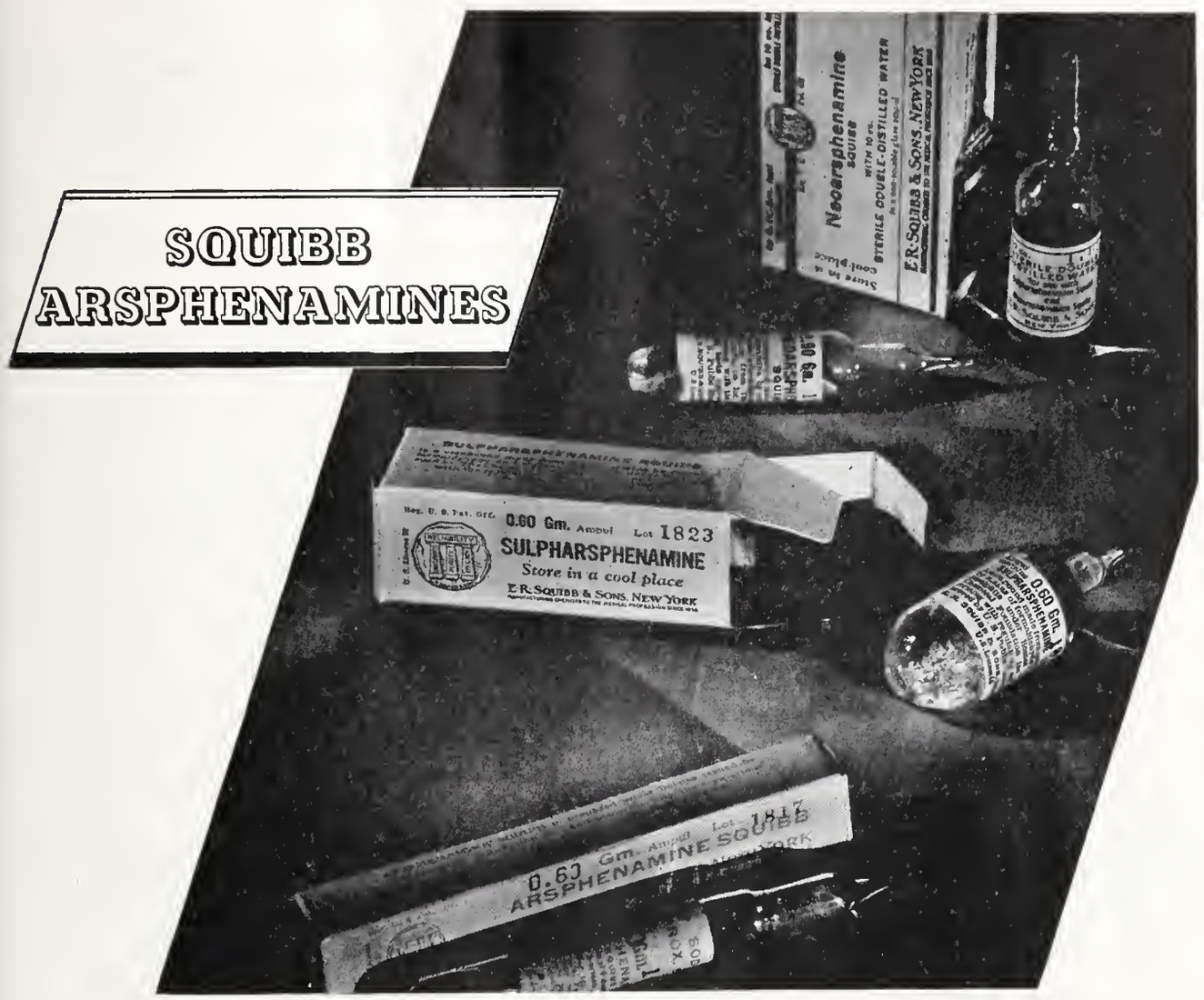

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BOOK REVIEWS

List of Books Received

BOOKS RECEIVED

Conception Period of Women. By Dr. Kyusaku Ogino, Head of the Gynecological Section of Takeyama Hospital, Niigata, Japan. English Translation by Dr. Yonez Miyagawa, Director of Government Institute for Infectious Diseases, Tokyo Imperial University, Hongooku, Tokyo, Japan, June 6, 1934. Paper. Pp. 94. Price, $1. Harrisburg: Medical Arts Publishing Company, 1934.

Das Glaukomproblem und Die Glaukomoperationen. Von Dr. Leopold Muller, Primaraugenarzt im Kaiserin Elisabethspital in Wien. Mit einer Abbildung im Text. Paper. Pp. 103. Wien: Verlag von Wilhelm Maudrich, 1934.

Nature's Way. The Fertile and Sterile Periods of Marriage. By Victor C. Pedersen, A. M., M. D., F. A. C. S. Cloth. Pp. 81. Price, $1. New York: G. P. Putnam's Sons, 1934.

Wish-Hunting in the Unconscious. An Analysis of Psycho-analysis. By Milton Harrington, M. D., Psychiatrist, Institution for Male Defective Delinquents, Napanoch, N. Y. Cloth. Pp. 189. Price, $2.50. New York: The Macmillan Company, 1934.

Nursing Schools Today and Tomorrow. Final Report of the Committee on the Grading of Nursing Schools. Cloth. Pp. 268. Price, $2. New York: The Nursing Information Bureau of the A. N. A., 1934.

An Activity Analysis of Nursing. By Ethel Johns, R.N., Editor, the Canadian Nurse, and Blanche Pfefferkorn, A. M., R. N., Director of Studies, National League of Nursing Education. Prepared under the auspices of the Committee on the Grading of Nursing Schools. Cloth. Pp. 214. Price, $2. New York: The Nursing Bureau of the A. N. A., 1934.

Institutional Care of Mental Patients in the United States. By John Maurice Grimes, M. D., Four Years a Staff Member of the Council on Medical Education and Hospitals of the American Medical Association. Cloth. Pp. 138. Price, $3. Published and Distributed by the Author, 1816 North Clark Street, Chicago.

Applied Anatomy. The Construction of the Human Body, Considered in Relation to Its Functions, Diseases and Injuries. By Gwilym G. Davis, M. D., Late Professor of Orthopedic Surgery and Associate Professor of Applied Anatomy in the University of Pennsylvania. Ninth Edition, Reset, Reillustrated and Completely Revised, by George P. Muller, M. D., assisted by Bernard J. Alters, M. D., Robert A. Kimbrough, Jr., M. D., Stirling W. Moorhead, M. D., I. S. Ravdin, M. D., and S. Dana Weeder, M. D. With 674 illustrations, mostly from original dissections and many in color by Erwin F. Faber. Cloth. Pp. 717. Price, $9. Philadelphia: J. B. Lippincott Company, 1934.

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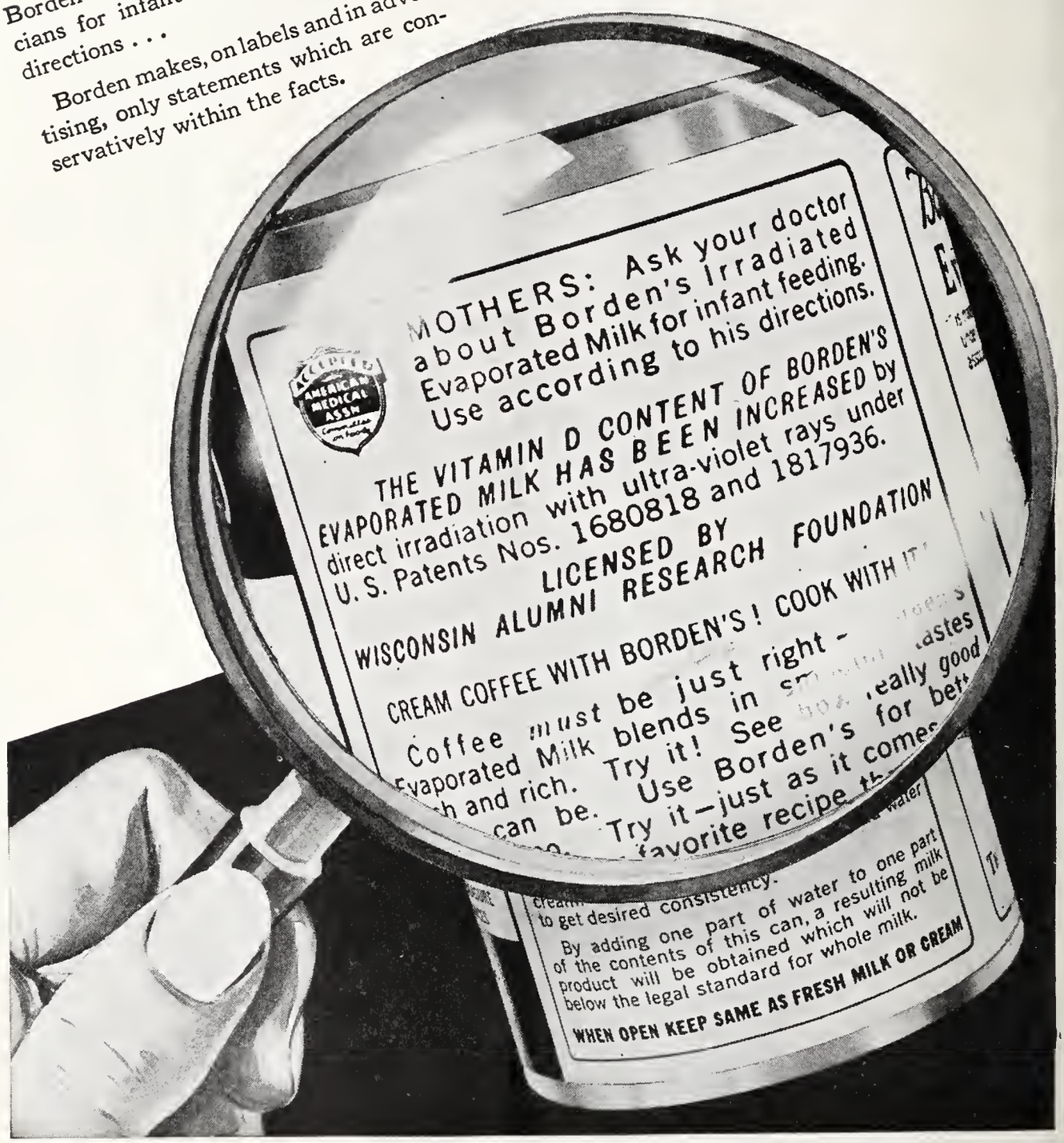

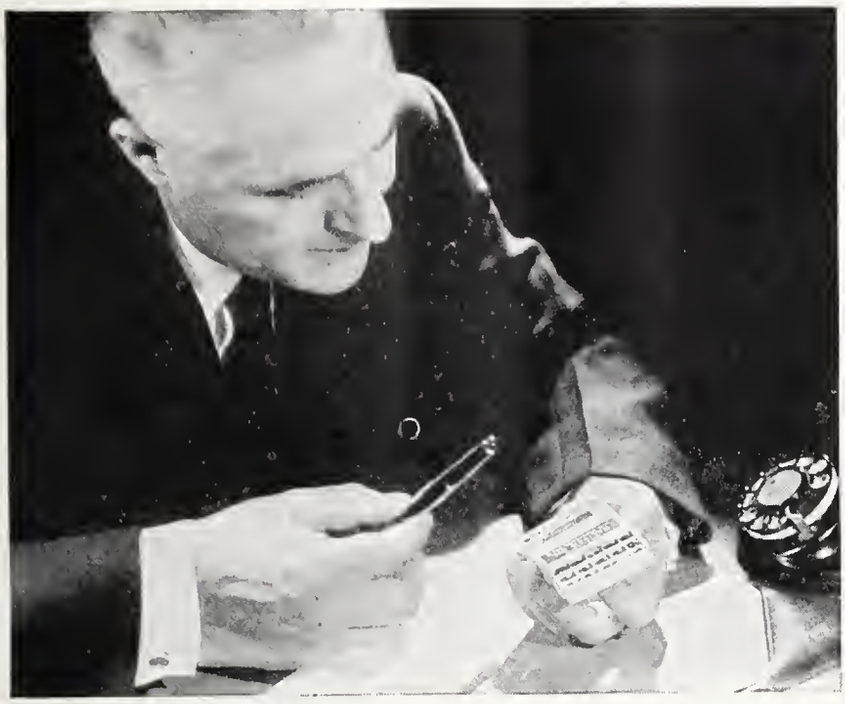

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BOOK REVIEWS

I Know Just the Thing for That. By J. F. Montague. Pp. 265. New York: The John Day Company. 1934.

As the nonmedical title of this book denotes, it was written for the laity; and as the writer is a rectal and intestinal specialist it treats chiefly of the gastro-intestinal tract. This small volume is full of good advice for everybody, and is very easy to read. The author does not like the widely advertised cathartics, and of these, phenolphthalein is his pet aversion. He calls it a poison that has caused skin eruptions, mouth ulcers, and even death (in a child from eating a box of the candy cathartic). He does not like roughage. It is liable to be too rough—bran is out, but agar-agar and psyllum seed are favored; they are nonirritating and very bulky. Mineral oil has its place.

There are chapters on eating and drinking. The best drink is water. People drink too little water, which causes constipation. Headaches and dizzy spells, bad breath, "that school-girl complexion," backache, sciatica, leg pains, dreams and sleeplessness, nervous breakdown, insanity and even impotence, have been helped by the enema!

"The Family Medicine Chest" is one of the most interesting chapters in the book. Castor oil merits very faint praise, if any, in fact most of the instructions concern when not to give it. Compound licorice powder, another old friend, also gets but scant recognition, while calomel is consigned to the poison class. Salts are discussed with the warning that they are all habit-forming drugs, and "the fact that the cathartic habit is not so morally degrading as the morphin habit does not make its acquirement any more commendable." Dilators are taboo; they do more harm than good. Suppositories are out.

The enema! Here at last we find what the doctor approves: but only with plain cool water, no soapsuds. You may add corn syrup (molasses) for gas, salt for mucus, cooked cornstarch for irritation. These are all simple remedies, and good.

There are many more chapters that discuss such subjects as biliousness, gallstones, gall-bladder trouble, intestinal bacteria, yeast, acidophilus cultures, colitis, constipation, cancer, and appendicitis. All are written with the idea of instructing the public and warning them against self-medication. The little book is most instructive and it is entertainingly written. A. N.

(Continued on Page 16)

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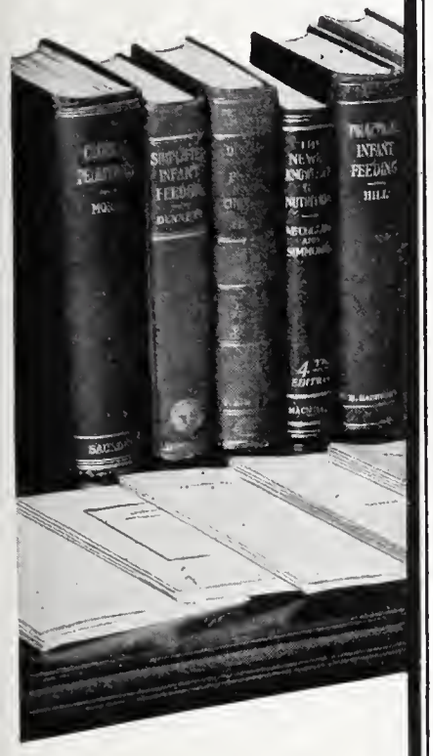

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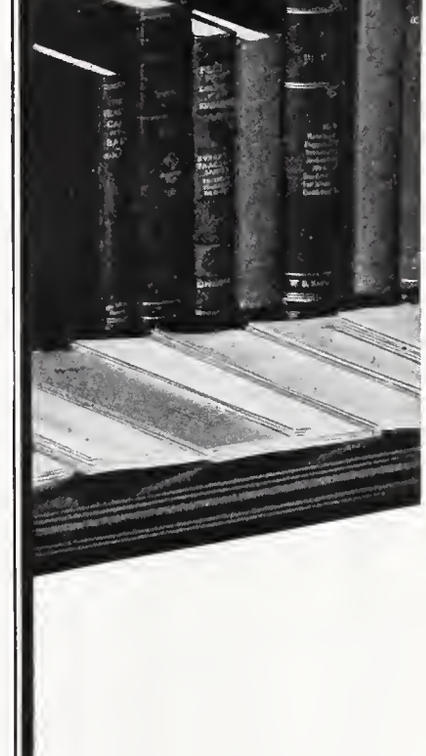

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BOOK REVIEWS

(Continued from Page 14)

Contagious Diseases—What They Are and How to Deal With Them. By W. W. Bauer. Pp. 218. New York: Alfred A. Knopf. 1934.

This book on the contagious diseases is written for parents and nonprofessional people. It is a simple and adequate explanation of isolation and quarantine regulations followed by brief descriptions of the contagious diseases with symptoms and complications. It distinctly is not a substitute for the doctor, but a supplement to him. It ought to be a help in educating our parents to a proper understanding and appreciation of preventive medicine and public health measures adopted for control of communicable diseases.

H. E. T.

Corrective Physical Education. By Josephine Langworthy Rathbone. Pp. 292. Illustrated. Philadelphia and London: W. B. Saunders Company. 1934. Price, $2.50.

The author gives a good outline of anatomy which will be comprehensible to the student of physical education. In such a small volume it is impossible to go into detail on this subject. The chapter on reconstructive education is very good and gives many illustrations which will assist both student and patient in understanding the exercises and their performance. It is a textbook which might be added to the curriculum of student nurses because the subject is presented in such a manner that it can be easily understood, and it is attractive because it is not too voluminous.

J. J. S.

Diseases of the Eye. By Charles H. May. Fourteenth edition. Baltimore: William Wood & Company. 1934.

One reads this edition of Doctor May's great classic with the same thrill and sense of gratification with which the nostalgic traveler views his homeland. The book was first published in 1900. Since then there have been fourteen editions in the United States, seven in Great Britain, nine in Spanish, five each in French and Dutch, six in Italian, three in Chinese and two each in Japanese and German. This imposing list of editions and translations is more eloquent testimony to the sterling value of this model for all textbooks than any mere words from a reviewer, however laudatory, can possibly be.

The author has never deviated from the purpose that he announced in the preface to the first edition "to present a concise, practical and systematic manual of the diseases of the eye, intended for the student and the general practitioner of medicine." Rare conditions are mentioned, but the emphasis is laid where it belongs, on what is fundamental and usual. One notes with satisfaction the addition of brief but lucid accounts of the use of the slit lamp and corneal microscope, the operative treatment of detachment of the retina, and intracapsular extraction of senile cataract. One also notes with approval the insistence on the importance of foci of infection in the etiology of the inflammatory diseases of the eye, a factor all too frequently overlooked by the practitioner and all too frequently never brought to the notice of the student at all, or actually deprecated, as in one of our local medical schools.

One's enthusiasm for the book is still further augmented by the simple, explicit account of the value and method of using the ophthalmometer and of Jackson's cross-cylinder in refraction. These invaluable aids in the fine art of refraction are either not present at all in the average oculist's armamentarium, or all together too often lie in a dark corner of his office covered by a neat black shroud and the dust of years. Doctor May has also adumbrated the future possibilities of the study of aniseikonia, the importance of the correction of which may well rank with that of astigmatism in the future.

One notes with regret the omission of any mention in the chapter on muscular anomalies of two procedures of great value. The monocular occlusion test introduced by Dr. F. W. Marlow of Syracuse, New York, in 1897 has been found by a small group of earnest students of these

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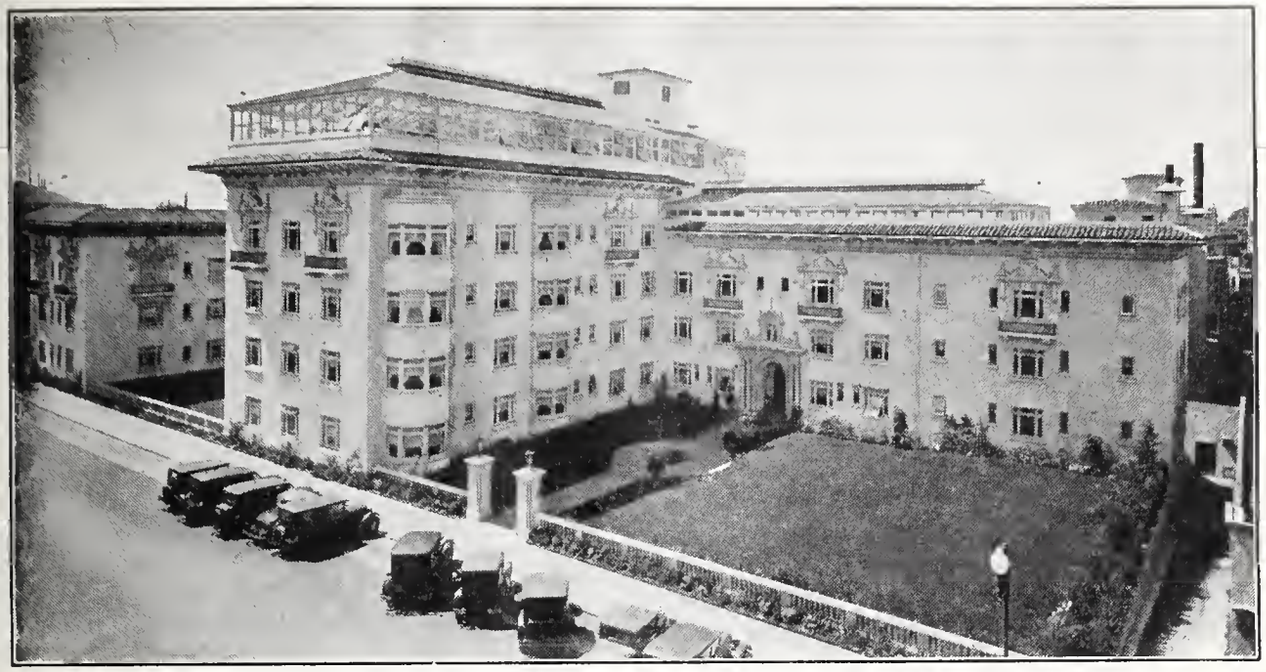

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conditions to be of great value in the diagnosis of latent heterophorias and as a guide to their treatment.

Although the recession operation on the internal rectus, published by Curdy in 1916, and recently popularized by Jameson and others, is given two pages, the vastly more accurate, simple and valuable "cinch shortening" technique of O'Connor, although published in 1912, is not mentioned. O'Connor's method permits the surgical cure of hyperphoria as a routine procedure instead of as a last resort as recommended by Doctor May. When used in combination with the safe and logical central (Stevens) tenotomy of an antagonist, the position of the eyeball can be changed forty-five degrees or even more with no loss of convergence and no fear of slipping sutures, the greatest defect of the recession operation next to the difficulty of its performance and the hazards which attend scleral suturing.

We note with pleasure the reduction in the number of conditions for which the yellow oxid of mercury ointment is advised and the addition of the paragraph in which he justly warns the reader that it is not indicated in all eye lesions.

Two things which excite admiration are noticeable in all of Doctor May's therapy. The first is the profound respect for the delicacy of the tissues of the eye. This comes from long observation of the effects of too crude and violent treatment. The second is that he does not give unqualified approval to a therapeutic procedure unless he has assured himself by personal experience that it is of value.

It is of interest that he frequently recommends for lesions of the conjunctiva and cornea, first, a mildly acid agent, and next, one in which the reaction is alkaline, as if uncertain in his own mind as to which will be the more satisfactory. It is to be hoped that by the time the next edition appears he will have convinced himself of the value of testing the pH of the tears and of the use of buffered solutions which will relieve symptoms and promote healing rather than unbuffered acids and alkalies which may do more to impair the natural defenses than to destroy the invading organisms.

If the aspirant for ophthalmological honors, or even those who desire a large and well-satisfied ophthalmic practice, were to be confined to a barren cell with no other reading matter than this book for a period of three months, the general level of American ophthalmology would be distinctly raised. G. N. H.

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Holden and Gurnee, Am. Jour. Obs. & Gyn., July, 1931.
Holden and Sovak, Am. Jour. Obs. & Gyn., Nov., 1932.
Counseller, Jour. A. M. A., Sept. 16, 1933.
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Stone, Am. Jour. Physical Therapy, April, 1932.
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Holliday, Jour. of Dental Research, Dec., 1932.
Shullman, Jour. of Med. Soc. of New Jersey, 1933.

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TWENTY-FIVE YEARS AGO

(Continued from Text Page 360)

From an article on "The Eye as a Causative Factor in Chronic Headaches with Reference to the Ear, Nose, and Throat" by Walter Scott Franklin, M. D., San Francisco.

To modern ophthalmology belongs the achievement of recognizing reflex results of eye strain and connecting the visual apparatus with the body in general. Asthenopia was described in the seventeenth and eighteenth centuries, but the underlying cause, the refractive error, was not recognized and the condition went unrelieved. . . .

From an article on "Visible Movement of Blood in Retinal Vessels" by C. S. G. Nagel, M. D., San Francisco.

Movement of the blood in retinal vessels had been observed in the early days of ophthalmoscopy (in a few instances by Jaeger, Liebreich and von Graefe in local changes, *i. e.,* detachment of retina and in a case of "neuritis"), also by V. Graefe several times in certain stages of cholera. . . .

An Appeal to the Medical Profession of the West and South for Historical Material.—Up to the present time there has not been a concerted effort made to collect and preserve historical data in regard to the origin, evolution and personnel of our profession in this part of our country. The result of this delinquency has been the total loss of much material that should have been preserved, especially pertaining to medical schools and societies, and biographical matter in connection with the practitioners and teachers of medicine of bygone days. . . .

1. Medical journals published in the West and South prior to 1880.
2. Medical books and pamphlets written or published in the West.

(Continued on Page 21)

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Relative Values of Carbohydrates Employed in Infant Feeding

Continued down from 1911

1916

"For the addition of sugar, I usually use dextri-maltose, which does not easily cause fermentation."—*L. L. Meininger: Use of Eiweissmilch, Arch. Pediat., 33:529-532, July, 1916.*

1916

In the treatment of marasmus, "Three per cent of malt sugar should be administered from the first, afterwards running up to as high a per cent as the child will take."—*L. T. Royster: A Handbook of Infant Feeding, C. V. Mosby Co., St. Louis, 1916, p. 100.*

1916

"Least irritating of all sugars, and more readily digested and quickly absorbed, is maltose."—*H. Lowenburg: A Practical Treatise on Infant Feeding and Allied Topics, F. A. Davis Co., Phila., 1916, p. 73.*

1916

"Dextrin-maltose is valuable in cases where intestinal disturbances are due to fermentation of milk sugar."

"Treatment (of sugar intoxication) consists in eliminating the latter (whey salts) as well as the sugars from the diet temporarily, and when the symptoms have subsided, a different sugar in proper proportion should be cautiously added; maltose and dextrin are preferable, because they are not apt to produce fermentation, while milk sugar is prone to set up fever and diarrhea."—*E. E. Graham: Diseases of Children, Lea & Febiger, Phila., 1916, pp. 179-201.*

1917

"For children who are not gaining on a normal formula with a sufficient amount of sugar of milk, or children who vomit when sugar of milk is fed, or who are constipated, the use of maltose instead of lactose often gives most satisfactory results. This is readily accomplished by substituting for the 4 or 5 per cent. of added sugar of milk an equal amount of dextri-maltose or malted milk, which latter gives, in addition to the maltose, some protein food and an insignificant amount of fat. In many cases children who have failed to gain on other food will immediately show a marked gain as soon as this change is made."—*R. G. Freeman: Elements of Pediatrics. Macmillan Co., New York, 1917, pp. 191 and 192.*

1917

"The carbohydrates most used in infant feeding are the three soluble sugars and starch. The three soluble sugars are lactose, or milk sugar, maltose, or malt sugar, and saccharose, or cane sugar. Maltose is not used in its pure form, on account of its cost. The various commercial preparations of maltose are combinations of maltose with various dextrins, but as in digestion dextrin is converted into maltose, the chemistry is practically the same."

"The sugar which is not absorbed is broken down by the bacteria of the intestine into a great variety of fermentation products, among them being lactic, butyric, acetic, and succinic acids."

"Another effect of the excessive fermentation which results from a relative excess of carbohydrate in the food, is the formation of an excessive amount of gas. This may cause abdominal distention, and, extending backward, it may carry irritating acid products into the stomach, and thus cause vomiting."

"Lactose is the sugar most likely to produce acute symptoms. The stools are practically always green and very irritating. Flatulence and colic are less prominent."

"The maltose-dextrin preparations rarely produce acute exacerbations."—*C. H. Dunn: The Hygienic and Medical Treatment of Children, Southworth Co., Troy, New York, 1917, pp. 423, 424, 425, 428.*

1918

"The sugars in the foods are milk sugar which is found in mother's milk as well as in cow's milk, cane sugar and malt sugar. Though milk sugar is a natural ingredient of milk it is not well borne by babies when added to their food; they digest cane sugar, the ordinary granulated sugar, much better; malt sugar is the easiest digested by babies."—*C. G. Leo-Wolf: Nursing in Diseases of Children, C. V. Mosby Co., St. Louis, 1918, p. 24.*

1918

"Maltose (malt sugar) has the advantage of being very easily digested; when part of the sugar given is maltose, many children gain more rapidly in weight than when only milk sugar or cane sugar is used."—*L. E. Holt: The Care and Feeding of Children, D. Appleton & Co., New York, 1918, p. 66.*

1919

"In the administration of protein milk with its large protein content, by adding to it sugar which is not easily fermented (dextri-maltose), we produce, instead of pathologic fermentation, a condition of putrefaction which changes the acidity of the intestinal contents to alkalinity, the peristalsis is decreased, the intestinal contents pass slowly through the large intestines with absorption of fluid and excretion of calcium and magnesium salts. These minerals unite with fatty acids to form the typical fat-soap-clay-coloured constipated stools characteristic of protein milk feeding, and it is at this point that dextri-maltose should be added to the food."

"The majority of the cases were kept on protein milk for a period varying from three to four weeks, and, in many instances, contrary to the usual opinion, we were able to keep the children on protein milk plus starch and dextri-maltose, sufficient for their caloric needs for a period of several months, in each instance accompanied by a substantial gain in weight and normal increase in vigor and tissue turgor with comparative freedom from digestive symptoms."—*A. Brown and I. F. MacLachlan: Protein milk powder, Canad. M. A. J., 9:528-537, June, 1919.*

1920

"There are three sugars commonly employed in infant feeding: (1) malt sugar or dextri-maltose, (2) cane sugar, and (3) milk sugar. Malt sugar is the most easily digested and assimilated, cane sugar next and sugar of milk the least so."—*L. O. Frech: The caloric method of artificial feeding in normal babies, Illinois M. J. 38:484-488, Dec. 1920.*

1920

Regarding treatment in disturbed metabolic balance in infants, "The one carbohydrate which seems to give the most satisfactory results in these cases is malt sugar."—*C. H. Seybert: Disturbed metabolic balance in infancy, Hahneman, Monthly, pp. 379-382, June, 1920.*

1921

"Next to woman's milk is cow's milk in simple modification with water and sugar in proper proportions and amount according to the age of the child. Milk Sugar is the most expensive and least satisfactory sugar. Dextri-Maltose is the best sugar."—*A. A. Shawkey: Infant foods and infant feeding, West Virginia M. J. 15:284-287, Feb. 1921.*

1921

With reference to hypotrophy, "In mild cases, the addition of dextrimaltose instead of cane or milk sugar may be sufficient to obtain a gain in weight."—*C. Herrman: The treatment of nutritional disorders in artificially fed infants, New York M. J. 114-158-160, Aug. 1921.*

1921

"Maltose and dextrin compounds are acceptable to the infant's digestion in relatively larger quantities. They are not as sweet as cane sugar. They are of practical value when larger amounts of cane sugar are not well borne.

"The so-called 'Mead's Dextri maltose with Potassium Bicarbonate' is laxative, and in the presence of a stationary weight may be given in larger amounts."—*F. W. Fergusson: A method for the modification of cow's milk, Journal-Lancet, 41:628-629, Dec. 1, 1921.*

1921

For cases of fermentative diarrhea, ". . . the ideal plan of treatment would be to give a food which is low in sugar (the food which that group of organisms thrive on) and high in protein. Calcium caseinate milk accomplishes this purpose. In our series of cases, we found it was necessary to use the casein calcium for from 5-8 days; we then stopped it and added dextri-maltose to the formula."—*A. G. DeSanctis and L. V. Paider: The value of calcium caseinate milk in fermentative diarrhea, Arch. Pediat. 38:233-236, April, 1921.*

1922

In the treatment of diarrhea, "The sugar is added gradually as conditions admit, some sugar other than milk sugar or cane sugar being used, preferably dextrin and maltose."—*H. E. Small: Diarrhoea in bottle-fed infants, J. Maine M. A. 12:154-158, Jan. 1922.*

1922

"The use of other soluble carbohydrates other than lactose for milk modifications are very good. Some believe the addition of dextrose or dextri-maltose makes the casein curd softer and easier to digest. This is questioned, but all agree that in cases of malnutrition, where the patient is intolerant to lactose and cannot get the benefit needed from the fat in the diet that the dextri-maltose is invaluable as it is the easiest sugar to digest, and can be immediately used for energy production without undergoing further change."—*E. G. Padfield: Remarks on infant feeding, J. Kansas M. S. 22:97-101, April, 1922.*

Continued down to 1934

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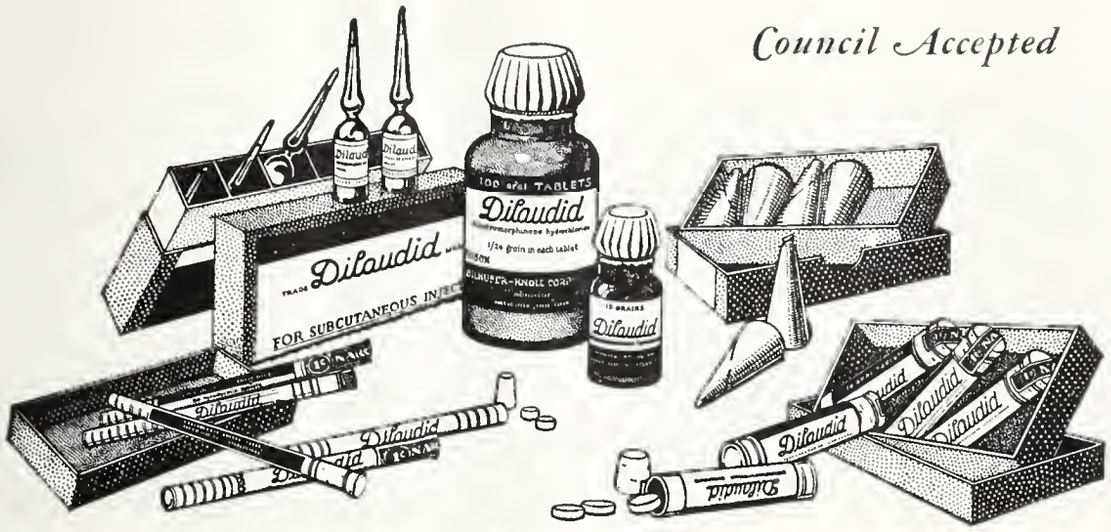

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(Continued from Page 18)

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BOARD OF MEDICAL EXAMINERS

(Continued from Text Page 360)

Dates for 1935 meetings of the Board of Medical Examiners were selected as follows:

Los Angeles, February 4 to 7, 1935.
San Francisco, July 8 to 11, 1935.
Sacramento, October 21 to 24, 1935.
Los Angeles (special written examination) July 22 to 25, 1935. Special oral examinations for reciprocity applicants will be held on other dates, which will appear on all applications distributed.

"The Chiropractic Act on the November ballot is bitterly attacked in a petition on file today for an injunction to restrain Registrar of Voters Charles J. Collins and Secretary of State Frank J. Jordan from certifying the number of votes cast for the Act. The action was brought by Percy Purviance, who conducts a chiropractic college, through M. James McGranaghan, attorney and chiropractor. 'The new act,' the

(Continued on Next Page)

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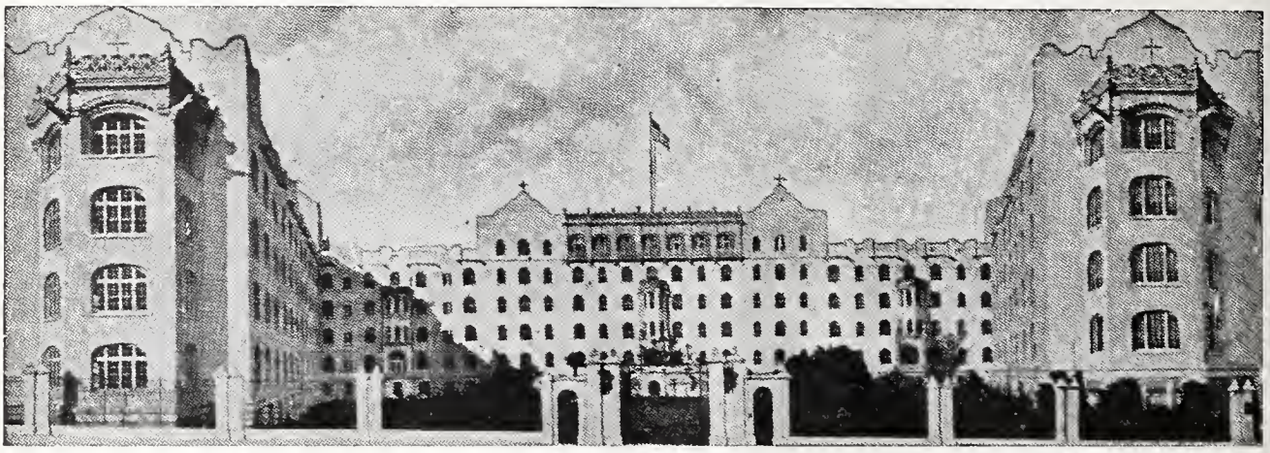

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BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

complaint states, 'provides for the creation of a public corporation, authorizes a board of governors created by the Act to approve non-chartered schools and permits the board to make a personal independent investigation and provides the findings of the board shall be binding on the Superior Court in any action for a review.' This provision of the Act, the complaint avers, 'provides for the legalizing of one of the most stupendous potential rackets and graft ever attempted.'" (San Francisco *Call-Bulletin*, September 10, 1934.)

"California optometrists may prescribe glasses to cure or aid defective eyes and cannot use 'prisms' or muscular exercises, it had been ruled today here by State Attorney-General U. S. Webb. The ruling came in response to a query from Dr. Charles B. Pinkham, secretary of the State Medical Board. The regulations are set forth in the State laws, Webb pointed out." (San Francisco *Call-Bulletin*, October 17, 1934.)

Reports relate that H. Matsuuki recently pleaded guilty in Los Angeles to a charge of violation of the Medical Practice Act and asked for probation.

"Acting in his capacity as attorney (he also is a chiropractor), M. James McGranaghan has sued the Affiliated Chiropractors of California today for $50,000 damages to his profession and business for circulating campaign literature assailing McGranaghan for his attack on the proposed amendment to the State Chiropractic Law. McGranaghan names twelve individuals, 500 John Does, 250 Jane Does, and Edith M.

(Continued on Page 24)

A FEW HIGHLIGHTS OF 1934

WITHIN twelve months of latest tabulation, the American Red Cross responded to the relief needs resulting from 72 disasters. These occurred in widely scattered localities, and ranged from fires in Ellsworth and Auburn, Maine, to floods in Washington and Idaho and tornadoes in many states.

In recognition of the universal dependence on the Red Cross in time of disaster, this year a widespread disaster-preparedness campaign was conducted by Disaster Service. A number of one-day institutes were held for the schooling of Chapter officers and workers, public officials and civic leaders, in the meeting of disaster emergencies.

This year sees the completion of two decades of Red Cross Life Saving. It was in February, 1914, that the Red Cross life saving corps was first established.

In the twenty years since, more than half a million life saving certificates have been issued, more than 265,000 of these in the last four years.

First Aid, companion service antedating Life Saving, also has given courses to more than half a million. One of its most spectacular recent accomplishments was the emergency training of more than 70,000 CWA workers by an estimated 7,000 authorized volunteer instructors working with the facilities and under the sponsorship of Red Cross Chapters throughout the country.

Red Cross Chapters also coöperated with the CWA extensively in public health nursing and nutrition projects.

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BOARD OF MEDICAL EXAMINERS

(Continued from Page 22)

Hicky as defendants. On September 15, he declares, the defendants distributed by mail 'a false publication which exposed him to hatred, contempt, ridicule and obliquy, which tends to injure him in his profession and occupation as an attorney and chiropractor.' The complaint recites the remarks to which McGranaghan takes umbrage, including this: 'Even Doctor-Lawyer McGranaghan, after three exhaustive attempts to defeat the amendment in the courts, is attempting to defeat the will of the voters of the great State of California by applying for an injunction to set aside a law that has not yet become a law. Can you conceive a human being with the power of reason making such a silly gesture?' McGranaghan is both plaintiff and attorney for the plaintiff. Associated with him in the latter capacity is Samuel M. Jones." (San Francisco *Call-Bulletin,* September 26, 1934.)

"One of nearly a score of physicians charged with illegally prescribing narcotics for addicts, Dr. Ethel Leonard today was freed of the charges brought by Government agents, following her acquittal and exoneration by a jury in Federal Judge George Cosgrave's court. Doctor Leonard admitted prescribing the narcotics, but contended that addiction to the use of dope is a disease and that she was, therefore, within her rights as a physician in issuing the prescriptions." (Los Angeles *Herald-Express,* September 15, 1934.)

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(Continued from Preceding Page)

the permanent injuries and suffering which the so-called cures have induced, is one of the never-ending tasks of the State Board of Medical Examiners. No sooner is one group of phony cures mowed down than another one springs up, and the ingenuity exercised by these charlatans is as amazing as the gullibility of the public who feeds them. . . ." (Sacramento *Bee*, September 15, 1934.)

"Augustus Monasterio, proprietor of a Wilshire Boulevard Radio Fever Institute, which drew its clientele largely from the motion picture colony, yesterday was arraigned before Judge William McKay on two counts of violation of the State Medical Practice Act. . . . A year ago Monasterio, an Italian who re-

(Continued on Next Page)

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Nitric Acid Radicle (NO_3)	120.0
Nitrous Acid Radicle (NO_2)	34.5
Phosphoric Acid Radicle (PO_4)	0.59
Tetraboric Acid Radicle (B_2O_7)	80.3
Arsenic Acid Radicle (AsO_4)	Faint Trace
Chlorine (Cl)	898.0
Bromine (Br)	Trace
Iodine (I)	12.3
Iron (Fe)	0.3
Alumina (Al_2O_3)	1.7
Manganese (Mn)	Trace
Barium (Ba)	Nil
Strontium (Sr)	Nil
Calcium (Ca)	53.0
Magnesium (Mg)	550.0
Potassium (K)	39.5
Sodium (Na)	638.0
Lithium (Li)	7.7
Ammonium (NH_4)	5.9
TOTAL	5518.79
Free Ammonia (NH_3)	5.6
Albumnoid Ammonia	0.17
Nitrogen from Nitrates	27.0
Nitrogen from Nitrites	10.5
GASES	
Hydrogen Sulphide (H_2S)	None
Free Carbon Dioxide (per liter 0°C and 760 mm	496 cc.
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BOARD OF MEDICAL EXAMINERS

(Continued from Preceding Page)

ceived his medical degree from University of Rome, took the State medical examination and failed. . . ." (Los Angeles *Examiner,* September 22, 1934.)

"Harry Kirmond, Marysville and Loma Rica, civil engineer, pleaded guilty in the Police Court last night to a charge of violation of the Medical Practice Act. . . ." (Press dispatch dated Marysville, September 20, and printed in the Sacramento *Bee* of the same date.)

"A secret indictment of James G. Lequime, thirty-nine, for violation of the Pure Food and Drug Laws in San Francisco, was revealed in Seattle today. . . . He is charged with having transported to San Francisco a mineral water, with 'false and fraudulent claims' as to its therapeutic value printed on the label." (San Francisco *Call-Bulletin,* September 20, 1934.)

"Mrs. Lena Marick, 918 Ocean Avenue, was made defendant yesterday in a suit filed in the Superior Court, in which she is alleged to have performed an operation without being duly licensed as a physician and surgeon. . . . According to Attorney Harold J. Abramson, who filed the suit, Mrs. Marick is the mother of 'Doc.' Andrew Marick, now in Folsom Prison for participating in the murder of a Santa Rosa policeman." (San Francisco *Chronicle,* September 21, 1934.)

"A dapper man with a small moustache, who says he hails from Edinborough, Scotland, and who is charged with victimizing women throughout California, was in Berkeley City jail last night. The man is Edward M. Mason, thirty-eight, arrested by Berke-

(Continued on Page 29)

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When an account is sent to the collecting agency that organization takes full charge of it thereafter.

In the September, 1927, issue of California and Western Medicine, page 398, appeared an article relating to the "collection of fees." Following this publication so many orders were received by us for printing the series of gum stickers and notices, we decided to print and stock the series in large quantities.

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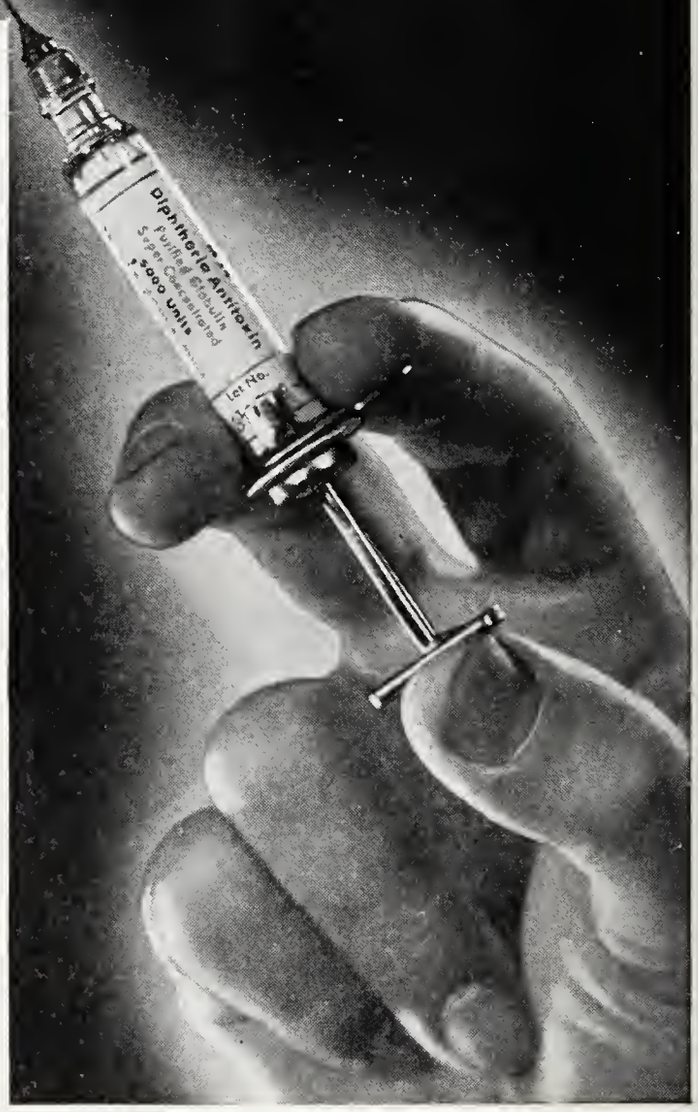

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BOARD OF MEDICAL EXAMINERS

(Continued from Page 26)

ley police at the behest of State medical inspectors, as well as for investigation of asserted bad check operations. . . . 'We do not know how many women have advanced money to Mason,' Dr. Charles B. Pinkham, secretary of the Medical Board, said last night. 'We do know, however, that we have been receiving complaints about his activities in California since last February, not only on the victimizing operations, but also that he poses as a doctor. Careful search of the records throughout the United States reveals he is not licensed to practice.' Mason told Berkeley police he has been in the East Bay district for the past three months. Two and a half years ago he was in Los Angeles, he said, and previous to that time worked in an insane asylum in Montreal, Canada. He has worked at a hospital at San Fernando as an attendant, and was looking for a job in the Livermore Veterans' Hospital when arrested. . . ." (San Francisco *Examiner,* September 29, 1934.

"The grand jury last night started investigations of the affairs of the Cala-Vada Oil Company and the International Institute of Universal Research and Administration. Attorney-General O'Gara of the Better Business Bureau, charged that "Dr." Theodore Rodman, former Folsom convict, fraudulently sold shares in the oil company. . . ." (San Francisco *Examiner,* October 2, 1934.)

"Selling worthless 'medicines,' which were guaranteed to be 'sure cures' for a variety of ailments, yesterday cost F. E. Dunn $250 in the court of Municipal Judge Newcomb Condee. Dunn pleaded guilty to three counts of false advertising and mislabeling. The charges were brought by agents of the State Medical Board. According to the arresting agents, Dunn sold

(Continued on Page 31)

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BOARD OF MEDICAL EXAMINERS

(Continued from Page 29)

a lime water preparation for as high as $7.50 a bottle. (Los Angeles *Examiner,* September 27, 1934.)

. "Dr. Stanley M. Boller, Hollywood physician, was acquitted by a jury in the court of Federal Judge George Cosgrave yesterday on charges of violating the Harrison Narcotic Act. He was alleged to have unlawfully issued a narcotic prescription to an addict. The physician admitted issuing the prescription, declaring that the condition of his patient was such as to require the use of morphin. Defendant's attorney, Ames Peterson, called several other physicians to testify in Doctor Boller's behalf. All said that they, too, would have prescribed morphin in a case of a patient suffering from gas poisoning in the World War, which Doctor Boller stated was the situation. . . ." (Los Angeles *Examiner,* September 27, 1934.)

The Borden Digest.—The *Borden Digest* gives the following interesting comments:

The Nutritional Aspects of Milk Pasteurization. E. V. McCollum. *American Journal of Public Health,* 24:956, September, 1934: An outstanding authority on the value of milk for children and adults reviews and discusses experimental work showing that pasteurized milk is nutritionally as valuable as raw milk, is a great deal safer, and is more digestible. In reducing the high incidence of such diseases as diphtheria, scarlet fever, intestinal infections, and bovine tuberculosis, pasteurization has many times proved effective. While certified milk is as safe as any food, the high cost of maintaining this product makes any wide-scale use of it impracticable. Pasteurization solves this problem by providing a safe milk at much lower cost. "The experience of numerous investigators, including the

(Continued on Page 35)

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Vol. 41 NOVEMBER, 1934 No. 5

CARCINOMA OF THE LARYNX*

OBSERVATIONS ON CASES TREATED BY PROTRACTED (COUTARD) ROENTGEN THERAPY

By L. H. Garland, M. D.
San Francisco

Discussion *by William E. Costolow, M. D., Los Angeles; Harold A. Fletcher, M. D., San Francisco; Robert S. Stone, M. D., San Francisco.*

IN dealing with malignant tumors of the larynx, as in dealing with malignant tumors anywhere in the body, it is generally agreed that there is no surer method of cure than complete and total excision. It is also generally agreed that complete and total excision of some tumors is impossible, for the simple and obvious reason that the tumor, by the very nature of its malignancy, is no longer confined to a small area, but has spread into neighboring and perhaps vital tissues. There is a second factor which renders the total and adequate excision of a tumor undesirable, and that is the amount of disability produced by the operation. There are few more disabling operations than total laryngectomy; there are few greater disappointments than the development of recurrence after the performance of so severe an operation, and recurrence is sufficiently common for us to question the efficacy of operation except in strictly localized epitheliomas of the vocal cord.

COUTARD'S STUDIES

Since 1931, when Coutard[3] published the results obtainable in the treatment of various malignancies of the pharynx and larynx, there has been widespread interest in the application of prolonged, carefully measured roentgen radiation to such lesions. So thorough was his work, and so carefully controlled his results, that, to give radiation therapy adequate trial, some clinics, notably one of the largest surgical clinics in Vienna, have ceased entirely from operating for carcinoma of the larynx. Coutard's method is based on the well known fact that cells in a state of active mitosis are much more radiosensitive than cells in a resting stage. In general, therefore, tumor cells are more sensitive to radiation than normal cells. By prolonging the time during which a given dose of radiation is applied, more tumor cells will be damaged in a dividing phase than if the dose is given over a short period. Also, the fact, that normal cells recover from the effects of radiation more quickly and more thoroughly than tumor cells, is made use of in protracted radiation, the tissues tolerating a much larger dose than they would were it given in a short time. We do not know the exact period of time during which all of the cells of a given tumor will be in a stage of division, but clinical results suggest that it is about two weeks. However, since doses large enough to destroy all of the tumor cells cannot be safely given to adequately large, nonsuperficial areas in a two-week period, it is common to have to extend the course of radiation to a four- or even six-week period. During that time, small or moderately-sized doses of x-rays are given daily to a variable number of fields about the neck, depending upon the size and location of the tumor. It is believed by some clinicians, including Coutard, that thick filters are of value in eliminating the softer components of the beam of rays; but results in other clinics, notably the Memorial Hospital clinic,[6] suggest that it is the long time and large total dose, rather than the thickness of the filter, which is effective.

Since the radiosensitivity of epithelial tumors diminishes with increasing differentiation and keratinization of the cells, tumors arising from different areas of the pharynx and larynx react differently to radiation therapy. Transitional epithelium is the most sensitive, and highly keratinized epithelium is the least sensitive. The order of radiosensitivity of tumors of this area is said[5] to be as follows: small cell lymphosarcomas, reticulum cell sarcomas, lympho-epitheliomas, transitional cell carcinomas, undifferentiated squamous epitheliomas, and pearl-forming differentiated epidermoid epitheliomas (see Table 1). The failure or success of roentgen therapy also depends on the extent of the tumor, the presence or absence of infection, the existence of invasion of bone or cartilage, and the general condition of the patient.

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* From the Stanford University Service at the San Francisco Hospital, Department of Public Health and Stanford University Medical School, San Francisco.

Read before the San Francisco County Medical Society, April 10, 1934.

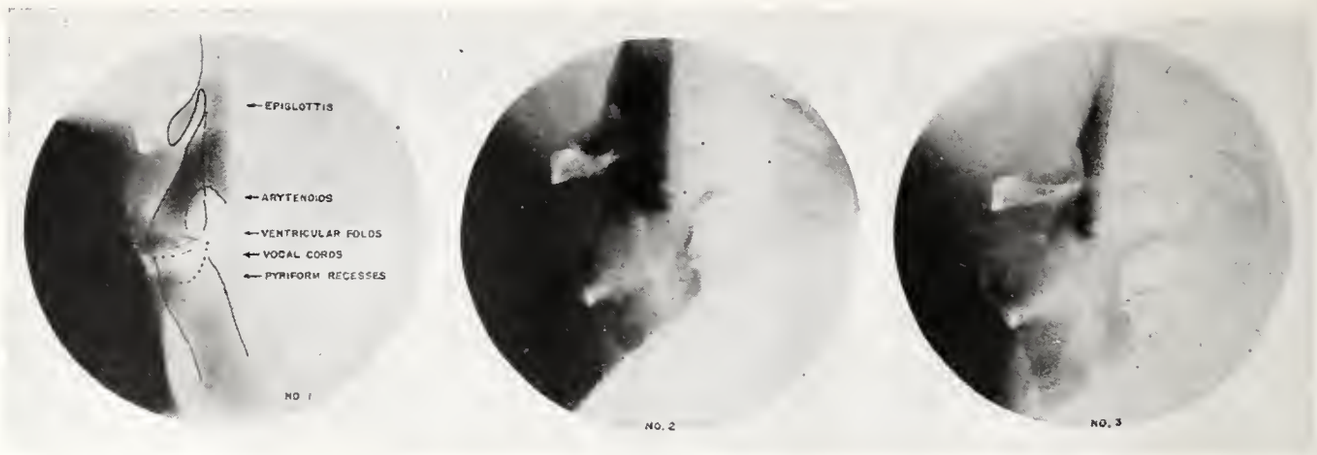

Fig. 1 Fig. 2 Fig. 3

Fig. 1.—Normal larynx, adult male. Note the ample dark air shadow between the middle of the epiglottis and the arytenoid eminences. Note the ample air shadow of the laryngeal ventricles (actually only the spaces between the false and true cords are normally thus air-filled, the upper recesses of the ventricles being collapsed).

Fig. 2.—Case 2. Well differentiated epithelioma of the left vocal cord involving both arytenoids. Hoarse for two years. Note that the tumor is an intrinsic lesion, and that the upper air shadow (in the region of the vestibule or aryepiglottic folds) is not encroached upon. This patient had a tracheotomy one week before making this film, the tube being removed just before exposure.

Fig. 3.—Case 2. After treatment. Voice satisfactory. Tracheotomy wound healed.

Infection and poor general health are liable to result in failure.

TISSUE REACTION TO PROTRACTED ROENTGEN THERAPY

In the average case of carcinoma of the larynx receiving a protracted course of roentgen therapy, the skin over the area being treated becomes very reddened and inflamed during the third or fourth week of therapy; in properly administered courses, the skin then develops a weeping exfoliation and the entire thickness of the epidermis over the area treated peels off. The corium and subcutaneous tissues are not destroyed, however, and within another two weeks complete regeneration of the epidermis, from the outside of the irradiated area inwards, develops. The fact that no other tissues are dissolved or necrosed differentiates this benign "epidermitis" from the undesirable and sometimes disastrous roentgen necrosis.

Shortly before, or coincident with the development of this epidermitis or epidermiolysis, the mucosa of the underlying larynx develops a membranous inflammatory reaction known as an "epithelitis" or "mucositis." This mucosal reaction is similar to that occurring in the skin and is followed by equally rapid resolution. At the same time, it is common for the patient to lose some weight and to develop moderate dysphagia. The weight normally returns rapidly following cessation of treatment.

LENGTH OF TREATMENT IN COUTARD PROCEDURE

Coutard believes it is always necessary to treat patients until a marked radio-epithelitis has developed. If the tumor has entirely disappeared by that time, and if its histological appearance suggests that it is of a very anaplastic type, treatment is discontinued. If, on the other hand, it is of a highly differentiated type, treatment may be continued; the duration of further treatment and the extent of further dosage depends upon personal judgment and experience. The main danger is apparently that of giving an overdose to the con-

Fig. 4 Fig. 5 Fig. 6

Fig. 4.—Case 3. Epithelioma right vocal cord involving base of epiglottis and both arytenoids. Extensive encroachment of upper laryngeal air passage. Emergency tracheotomy.

Fig. 5.—Case 3. After treatment. Air shadow of vestibule practically normal. Slight residual edema of arytenoid areas. Voice normal.

Fig. 6.—Case 8. Massive epithelioma of larynx, recurrent postoperative. Tumor extending from apex of epiglottis and base of tongue down to 2 centimeters below the vocal cords. Note that the vertical extent of the tumor can best be shown by roentgen examination. This tumor shrank over 50 per cent following the course of roentgen therapy, and the patient was able to "speak" for some months. He later developed bronchopneumonia and died.

TABLE 1.—*Classification of Carcinomas of the Larynx According to Extent and Type*

Stage I	Small localized tumor (not over 1 centimeter in extent), usually intrinsic and often confined to one vocal cord.
Stage II	Medium sized, clinically localized tumor (not over 4 centimeters in extent), usually largely, if not entirely, intrinsic.
Stage III	Large tumor (over 4 centimeters in extent), often both intrinsic and extrinsic and associated with probable, if not definite, cervical adenopathy.
	(Note: For purposes of summarizing results in subsequent tables the suffix A equals non-operated case and suffix B equals recurrent postoperative case.)
Well differentiated carcinoma	A squamous cell epithelioma (epidermoid carcinoma) composed chiefly of differentiated cells, showing much keratinization and pearl formation. Often arises from the true vocal cords, the glosso-epiglottic recess and lateral pharyngeal wall. Usually "radioresistant," i. e., requiring very large doses to cure; usually metastasizes to glands late. Commonly graded 1 and 2.
Poorly differentiated carcinoma	A squamous cell epithelioma (epidermoid carcinoma) composed chiefly of transitional epithelium, or poorly differentiated squamous cells, showing no keratinization. Often arises from the superior or false vocal cords, the aryepiglottic area, the pyriform sinus or the posterior pharyngeal wall. Usually not "radioresistant"; sometimes metastasizes to glands early. Commonly graded 3 and 4.
	(Note: Lymphoepitheliomas or squamous cell tumors arising in contact with lymphoid tissue may be occasionally confused with large extrinsic laryngeal tumors. They are usually radiosensitive and on shrinkage will reveal their true point of origin (such as the base of the tongue).

nective tissue, and thereby delaying or preventing complete healing. Extreme overdosage is, of course, followed by necrosis, even of bone and cartilage. Coutard believes that the mucous membrane must receive approximately 2,500 roentgens (including scatter) to produce an epithelitis. It is usually best to produce this mucosal dose by using two lateral fields, their size depending on the size and extent of the tumor. In Coutard's twenty-two cured cases of carcinoma of the larynx (28 per cent of seventy-seven cases treated), the total dosage varied from 4,900 roentgens to 7,500 roentgens, and was delivered in a period of nine to thirty-nine days, using as a rule two fields of entry. This dosage is the total dosage given to all fields and represents roentgens measured on the skin with back scatter. His cured laryngeal cases received on average, 5,000 roentgens (air), one side receiving 3,000 roentgens, and the other, 2,000 roentgens. His maximum total dose in this cured series was 7,500 roentgens (skin) or 6,200 roentgents (air). Giving doses much larger than these failed to produce any cures. In passing, one may note that the above percentage of cures refers to cases treated between 1920 and 1926; since that time he believes that his percentage of cures has increased considerably.

CARCINOMAS WHICH RESPOND

Epitheliomas of the cords, glottis or subglottis, without much infiltration of the laryngeal muscles, can be cured in a good percentage of cases by adequate roentgen therapy or adequate surgery; conservation of the voice is, of course, better with radiation. Epitheliomas of the cords and glottis, with considerable infiltration of the laryngeal muscles or with chondritis, or of a highly differentiated type, are often radioresistant. Coutard believes that in some of these cases resection of the infiltrated cartilage or the infected areas, followed by roentgen therapy, is more apt to produce cure than roentgen therapy alone. Judgment is, of course, extremely difficult, and in the average moderate lesion of the hypopharynx and larynx with a little infection, it is often difficult to decide whether to advise surgery or irradiation. Curiously enough, Coutard believes that unilateral adenopathy is easy to cure by adequate roentgen therapy, provided secondary infection is not present.

Most of the cases in Coutard's series that were cured, were cured by a single course. Only 4 per cent of the cured cases received a second course, this being given about six months after the first one.

COMPLICATIONS OF RADIATION THERAPY OF CARCINOMA

The complications of radiation therapy of carcinoma of the larynx include local edema (sometimes necessitating tracheotomy), dysphagia and pain. In our small series of cases we had none in which the edema was sufficient to need tracheotomy, though it must be noted that most of our patients had had a preliminary tracheotomy on account of the large size of the tumor. Indeed, three of them came in on account of severe obstruction to respiration. Dysphagia was present in about half of the cases, and pain in only one-quarter. Direct digestive and cardiovascular disturbances, with the small fields needed in radiation therapy of carcinoma of the larynx, do not occur. However, dehydration with its debilitating effects, must be constantly guarded against. No significant changes in the blood picture were noted.

TECHNIQUE AFTER COUTARD

The actual technique used in the average case is as follows:

The patient is examined with the laryngologist, and the position and estimated extent of the lesion is marked with gentian violet or silver nitrate on the surface of the neck on each side of the larynx. A field at least 3 cm. wider on each margin than the estimated maximum size or extent of the tumor is used. The initial dose is usually 200 roentgens, although in some cases we have started

TABLE 2.—*Summary of Carcinomas of the Larynx Treated by X-Rays (Modified Coutard Technique)*

Case No.	Sex Age	Site of Tumor, Duration of Symptoms, Date of Biopsy, etc.	Histology and Stage	Treatment Begun	Length of Treatment in Days	Dosage (r Measured in Air)	Total Dosage Including Backscatter (±25%)	Course and Result
1	M 56 T. H.	Tumor arising from right pyriform sinus. Hoarse several months. Wa. R. (+++) Biopsy 9-30-33.	Probable epidermoid carcinoma Stage II A	10-4-33	40	2,400 r to left 2,600 r to right lat. fields av. 7.5 cm. in diam.	8,000 r	Radioepithelitis 10-30-33. Lesion shrunken to one-third its former size 11-10-33. Tiny pedunculated nodule removed 11-15-33. (Biopsy: fibrosis, marked "roentgen changes," no ca. cells visible). Clinically well 4-4-34 (5 months).
2	M 56 R. N.	Tumor left vocal cord extending to both arytenoids. Hoarse 2 years. Lesion grew under antiluetic treatment. Wa. R. (–) Developed obstruction. Tracheotomy 8-4-33. Biopsy 2-9-34.	Epidermoid carcinoma Stage II A	8-10-33	50	4,400 r to antr., 1,000 r to left 800 r to right lat. fields; antr. 7 x 6 cm. lat. 9 cm. diam.	7,750 r	Radioepithelitis 9-8-33. Bronchopneumonia and lung abscess 9-24-33. Tracheotomy healed and voice returned 10-12-33. Larynx showed small scar left vocal cord 4-4-34. Gained 16 pounds. Clinically well 4-4-34 (7 months).
3	M 60 J. S.	Tumor right vocal cord involving epiglottis and arytenoids. Hoarse and dysphagic 3 months. Emergency tracheotomy 8-17-33. Biopsy 8-23-33.	Carcinoma Type unclassified Stage II A	8-24-33	35	3,600 r to right 2,200 r to left lat. fields, av. 5 x 9 cm. rectangle	7,250 r	Radioepithelitis 10-5-33. Tracheotomy healed and voice normal 11-2-33. Clinically well 3-30-34 (7 months).
4	M 65 B. K.	Tumor arising from left pyriform sinus, extensive. Hoarse 3 months. Wa. R. (–) Biopsy 9-30-33.	Epidermoid carcinoma Stage II A	10-4-33	40	2,400 r to both right and left lat. fields, each 10 x 8 cm. rectangular	6,000 r	Tracheotomy 10-13-33. Radioepithelitis 11-4-33. Bronchopneumonia 11-20-33. Died 11-29-33. P.M. microscopic examination: marked roentgen changes in the residual tumor tissue (necrosis; nuclear pyknosis, etc.). Cause of death: Multiple pulmonary abscesses, mediastinitis.
5	M 57 W. S.	Tumor involving both cords, extensive infiltration. Hoarse several years with some dyspnea. Biopsy 9-30-33. Wa. R. (–) Laryngofissure and excision 10-15-33. Recurrence 12-15-33. Tracheotomy required 3-7-34.	Epidermoid carcinoma Stage II B	3-2-34	43	3,300 r to left 2,600 r to right lat. fields, 6 x 8 cm. areas	8,500 r	Radioepithelitis 4-12-34. Dyspnea and stridor improved.
6	F 60 W. W.	Tumor right side of larynx, extensive, advanced with adenopathy. Hoarse one year. Right otalgia. Patient feeble and senile. Wa. R. (–).	Biopsy not permitted. Stage III A	3-22-33	31	1,200 r to left 1,300 r to right lat. fields, 10 x 14 cm. areas (patient would not finish course)	(3,125 r)	Radioepithelitis did not develop. Patient's stridor and dyspnea improved so much that she decided not to continue treatments. Present condition is unknown.
7	M 71 H. W.	Tumor left retrolaryngeal area, large with cervical adenopathy. Dysphagia and hoarseness 2 months. Wa. R. (–) Biopsy 11-10-33.	Carcinoma, probably squamous. Stage III A	11-15-33	26	3,100 r to both left and right lat. fields, each 9 cm. diameter	7,750 r	Radioepithelitis 12-4-33. Bronchopneumonia 12-21-33. Left hemiparesis 12-29-33. Skin over neck normal; voice much improved. However, films showed metastatic lesions in spine and ribs. Died 1-14-34. (Septicemia and cachexia?) No P.M. allowed.
8	M 59 C. B.	Tumor extending from base of tongue to 2 centimeters below vocal cords, advanced, hopeless. Palliation requested. Hoarse 3 years. Laryngectomy 2 years ago followed by moderate course of radiation therapy. Tracheotomy 2 years ago. Biopsy 1931, Wa. R. (–).	Carcinoma Type unclassified Stage III B	9-26-33	32	2,400 r to both left and right lat. fields, each 8 x 10 cm. in area	6,000 r	Radioepithelitis 10-26-33. "Voice" returned (patient could actually speak) 10-16-33, and films showed 50% recession of tumor. Tracheotomy tube removed 1-15-34. Bronchopneumonia developed and patient died 1-21-34. No P.M. allowed.
9	M 74 M. M.	Tumor left side of larynx, recurrent, postoperative, with left cervical adenopathy. Hoarse 2 years. Wa. R. (–). Treated for "luetic" laryngeal ulcer in 1931. Laryngectomy 5-28-32 preceded by short preoperative roentgen course (600 r anteriorly to 10 x 10 centimeters field in 3 days). Recurrence 9-28-32. Biopsy 5-28-32.	Epidermoid carcinoma Stage III B	9-29-32	19	1,800 r to left 1,600 r to right lat. fields, each 18 cm. in diameter (patient too weak to finish course)	4,200 r	Radioepithelitis did not develop. Patient did not improve and died 11-28-32. (?Bronchopneumonia and cachexia). No P.M. allowed.

TABLE 3.—*Summary of Roentgen Therapy Results*

Total number of cases treated	9
Clinically well (arrested?)	4
Improved (but died of subsequent bronchopneumonia)	3
Unchanged (no extension) of lesion for some months	1
No improvement (died)	1
Total number living	5
Total number dead	4

with only 100 roentgens. Such a dose is given daily to alternate sides of the neck for a period of about four weeks. The factors used are 200 KVP., 30 Ma., Thoraeus filter (0.4 mm. Sn, 0.25 mm. Cu, 1.0 Al) H. V. L. 1.5 cm. Cu, 50 to 60 cm. target skin distance, fields varying from 7 to 10 cm. in diameter. The exact size and shape of the field varies in every case, and also varies in the same cases from time to time. A long, cylindrical lead cone, 9 cm. in diameter, is used to accurately center the beam over each field; pieces of "radiopaque" lead rubber (2 mm. thick, absorbing 95 per cent of the primary beam) are used to outline exactly the area to be treated; and a piece is laid against the ventral edge of the neck to prevent marginal overlapping of the two beams. The patient lies on his back with one shoulder moderately elevated, and the projection of the beam is an oblique, rather than a true lateral one. A daily dose of from 100 to 300 roentgens is kept up, excluding Sundays, until the neck has received approximately 3,600 roentgens to the more diseased side, and 2,400 roentgens to the less involved side. The total air dosage by that time is therefore 3,600 plus 2,400, or 6,000 roentgens. If one adds 25 per cent to this air figure to allow

TABLE 4.—*Summary of Results According to Extent of Lesion*

	I A	I B	II A	II B	III A	III B
Total number in each group	0	0	4	1	2	2
Clinically well	0	0	3	1	0	0
Improved but later died	0	0	1	0	1	1
Unchanged but later untraced	0	0	0	0	1	0
No improvement and died	0	0	0	0	0	1

TABLE 5.—*Summary of Carcinomas of the Larynx Treated Surgically (During the Same Period and in the Same Hospital as the Nine Roentgen Treated Cases Listed in Table 2)*

Case No.	Sex Age	Site of Tumor, Histology and Stage	Operation and Date	Course and Result
1	M 71 T. M.	"Infiltration beneath both cords." Biopsy 4-26-33. Squamous cell epithelioma. Stage I A.	Laryngofissure and fulguration 6-28-33.	Returned to work. Now untraced.
2	M 65 N. T.	Tumor mass both laryngeal ventricles with fixation right arytenoid. Cervical adenopathy. Biopsy 7-12-33. Epithelioma, type unclassified. Stage III A.	Total laryngectomy with resection neck glands 7-12-33.	Steadily downhill. *Died* 7-30-33. (Eighteen days postoperative.)
3	M 49 J. S.	Tumor of right vocal cord. Biopsy 10-22-32. Epithelioma, type unclassified, Stage I A.	1. "Hemilaryngectomy with removal of right vocal cord" 10-22-32. 2. Total laryngectomy 4-22-33.	*Recurrence* again developed. Present status unknown.
4	M 45 J. M.	Nodular tumor of right vocal cord, size of a pea. Biopsy 12-29-31. Epithelial hyperplasia, ? precancerous. Stage I A.	Laryngofissure 12-29-31.	Recovered, present status unknown. (? benign lesion.)
5	M 61 N. S.	Extensive tumor of right cord and ventricle, left ventricle, etc. Biopsy 12-14-31. Squamous cell epithelioma. Stage III A.	Laryngectomy 12-22-31.	*Died* 12-26-31. "Suffocation due to obstruction of tracheotomy opening."
6	M 74 M. M.	Tumor size unrecorded. Biopsy 5-28-32. Epidermoid epithelioma. ? Stage II A.	Laryngectomy 5-28-32.	Recurrence 8-28-32. Roentgen therapy. *Died* 11-28-32. (Cachexia, bronchopneumonia, cancer larynx.)
7	M 57 C. B.	Moderate sized tumor of larynx. Biopsy 1931. Epithelioma, type unclassified. ? Stage II A.	Laryngectomy 1931.	Recurrence July, 1932. Roentgen therapy 1932. Recurrence. Roentgen therapy 1933. *Died* 1-21-34. (Cachexia, cancer larynx.)
8	M 40 C. C.	Moderate sized tumor of larynx. Biopsy 2-23-34. Epithelioma, type unclassified. Stage II A.	Laryngectomy 3-5-34.	Steadily downhill. *Died* 3-14-34. (Nine days postoperative. No P. M. allowed. (Clinical diagnosis: Pulmonary hemorrhage.)

TABLE 6.—*Summary of Surgical Results*

Total number of cases operated	8
Clinically well (untraced but ? arrested)	2
Improved but developed recurrence	3
No improvement (died postoperative)	3
Total number living unknown, but possibly	3
Total number dead	5

for back scatter, the total skin dose is approximately 7,500 roentgens. As may be seen from Table 2, this is the average dose received by our cases. (It is quite misleading to add up the roentgens given to each field to express the total dose; when so added up in this paper, it is done only to permit ready comparison with existing literature.)

During the end of the third or middle of the fourth week a marked cutaneous reaction develops which necessitates oily, soothing skin dressings (pieces of gauze soaked in mineral oil or smeared with boric acid ointment). A high caloric liquid diet is given, and every effort is made to see that the patient takes plenty of fluids, sleeps well and does not catch cold. Since many of them are breathing through a relatively new tracheotomy opening, they are apt to develop a mild tracheobronchitis with catarrhal discharge.

Whether the treatment should be pushed beyond the above stage depends on the individual case. In one case the patient received a total dose of 6,400 roentgens (air) or 8,000 roentgens (skin). Judging by subsequent developments, we now think that some of our patients should have received more radiation, or radiation more rapidly delivered, while some might have been cured with less. Time and experience will be the only answers to these two problems.

RESULTS OBTAINED IN AUTHOR'S SERIES

The actual results in our short series of cases are tabulated in Tables 3 and 4. There were no small or early lesions in the series. Of four cases classified as moderate lesions, nonoperated, three patients are living and clinically arrested, one is dead (bronchopneumonia with multiple pulmonary abscesses). One case, classified as moderate, recurrent postoperative, is clinically well. Of three patients, classified as advanced recurrent postoperative, all are dead, one showing no improvement after therapy, two showing definite and, in the words of the attending surgeons, remarkable improvement. One case, classified as advanced, nonoperated, is clinically unchanged following radiation, the growth having neither receded nor extended during the period under observation.

TABLE 7.—*Comparison of Recent Surgical and Radiological Results in the Treatment of Carcinoma of the Larynx (Literature)*

Treatment	Authority	Publication	Total Number of Cases	Results
Roentgen	Coutard, H.	Amer. Jour. Roent. and Ra. Ther. 1932. 28, 313.	77	22 cases or 28 per cent cured 4 years and over.
Roentgen	Lenz, M.	Jour. Amer. Med. Assoc. 1932. 99, 1840.	33	7 cases or 21 per cent clinically well 6 months to 2½ years.
Roentgen	Schinz, H. R.	Strahlentherapie 1933. 1-7-33.	116	40 cases or 34 per cent clinically well 9 months to 3 years.
Surgical	Colledge, L. and Peacock, R.	Jour. Laryngol. and Otol. 1932, 47, 161.	79*	11 cases or 13.9 per cent cured 4 years and over. 33 cases or 41 per cent clinically well 9 months to 10 years.

* See Table 8.

COMPARISON WITH OTHER RESULTS REPORTED

It will be of interest to compare the results obtained by roentgen therapy with those obtained by surgery, working under similar conditions, in the same institution and with the same general type of patient. These surgical cases were handled by skilled, experienced surgeons, and received the same type of nursing care as the roentgen treated cases. They are tabulated in Table 5 and summarized in Table 6.

Lastly, the results of treatment in 334 cases recently reported by well known radiologists are

TABLE 8.—*Analysis of Colledge and Peacock's Surgical Results in the Treatment of Carcinoma of the Larynx*

Total Number of Cases	Total Number Classified as "Operated"	Mortality 26.5 per cent	Recurrence 25 per cent	Result
108	79	(21 cases)	(20 cases)	8 cases (10 per cent) cured 5 years or more. 11 cases (13.9 per cent) cured 4 years or more. 33 cases clinically well 9 months to 10 years.

Note (1)—Judging by the description of the lesions and using a I-III Stage classification, the "arrested" cases show 18 in Stage I, 8 in Stage II, 7 in Stage I or II, and 0 in Stage III.

Note (2)—Of the total 108 cases, 29 are described as refusing or being unsuited for operative treatment. If the cured or arrested percentages were based on *all cases* "treated" the 4-year cures would be 10 per cent and the 5-year cures 7.4 per cent respectively.

tabulated (Table 7), and a carefully documented series of surgically-treated cases are analyzed (Table 8). It will be seen that the best radiological results are exactly twice as good as the best surgical results (28 per cent of four-year cures as compared with 13.9 per cent), while the mortality of the latter is considerably greater than that of the former. On the other hand, it must be emphasized that no one realizes better than the radiologist that cases of malignant disease thought cured do, in fact, sometimes recur at a later date, and no one will pretend that these four-year results are to be regarded by any means as final, or even as satisfactory at the present time.

IN CONCLUSION

In concluding, I would like to present the following impressions:

1. Many cases of carcinoma of the larynx can apparently be cured by adequate, carefully administered roentgen therapy.

2. None of the present series of nine patients has been observed for a period of five years or more, and therefore the number of clinical cures cannot be stated. However, it may be pointed out that four out of the nine patients treated are clinically well at the time of making this report.

3. There was no mortality directly attributable to the roentgen therapy in this series of patients. No late necrosis of cartilage or bone, and no emergency tracheotomies nor pharyngeal obstructions developed following radiation; nevertheless, such complications may be expected to arise occasionally in a sufficiently large series of patients.

4. Roentgen therapy avoids destruction of the voice and, in our series of patients, has resulted in no disfigurement of the neck.

5. The choice of therapeutic attack in cancer of the larynx would appear to be a joint problem for the radiologist and the surgeon, the indications for one or the other (or both) procedures varying in each individual case.*

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* The writer wishes to acknowledge with gratitude the painstaking work of Drs. W. L. Allred and M. J. Thorpe, without whose capable assistance the actual details of treating the patients mentioned in this paper would not have been accomplished. He is also indebted to the officers and staff of the Ear, Nose and Throat Department for their consideration and unfailing coöperation.

DISCUSSION

William E. Costolow, M. D. (1407 South Hope Street, Los Angeles).—Doctor Garland has very completely described the present-day conception of the irradiation treatment of carcinoma of the larynx. The published work of Coutard in 1931, which he mentioned, has caused all radiologists to adopt this technique or some modification of it. Previous to this, usually a combination of internal radium application and external x-ray irradiation was used. The results were erratic, although in some cases of not too extensive involvement with radiosensitive growths, arrests were obtained. In our clinic during the past two years we have used a technique similar to the one which Doctor Garland has described. Five patients have been given a complete treatment according to this technique: two are deceased; one is alive and improved, but only recently treated; one has been well and free from symptoms for one year, and one has been well and free from symptoms for one year and four months. Other cases have been treated, but did not receive a complete treatment according to the Coutard technique.

One of our patients, who is apparently well, shows a case in which the growth was early and localized to one vocal cord. Another case is one in which the growth had become extrinsic and quite extensive. Patients having a growth which has involved the cartilage probably will not be permanently cured by this method, but worthwhile palliation may be obtained. Attempts should not be made to excessively irradiate these cases, however, if the malignancy is low grade, because, as Coutard has pointed out, the vasculoconnective tissue will be damaged, and the aid which this tissue affords in destroying the malignancy will be lost. Coutard believes that the radiosensitivity of cancer cells depends not only upon the youthfulness of the cells, but also upon the reactionary changes produced in the surrounding vasculoconnective tissue. In high-grade, or anaplastic malignancy, the direct action of the rays on the youthful cells may be sufficient to destroy these cells; but in a low-grade or differentiated malignancy the reaction from the vasculoconnective tissue is the most important factor. Hence, these cases must be carefully examined daily, the laryngeal growth and irradiation reaction carefully studied. It is important, especially in the reactionary period, to avoid excessive reaction. This may be accomplished by using weaker daily dosage intensity and increased duration of treatment time.

Coutard lately, in the more radioresistant growths, has increased the duration of treatment from thirty to 90 days, with a daily dosage of 175 r to 250 r, given in two seances, and has been able to produce disappearance of tumors which had been considered radioresistant.

The irradiation treatment of cancer of the larynx, as of cancer in other parts of the body, should be individualized, the type and degree of malignancy of the tumor accurately determined and appreciated, the extent of the disease defined, and the general condition of the patient evaluated before the treatment is planned and carried out. As has been pointed out by Coutard, a small margin exists sometimes between the dose which will determine a cure and the dose which will provoke an injury.

Doctor Garland's cases, together with the ones reported in the literature, and the increasing experience with this type of irradiation by many therapists, show that definite arrests may be obtained in carcinoma of the larynx; and equally important that a great amount of palliation may be obtained by proper irradiation. The results will be proportionate to the accuracy with which the patients and their growths are studied, to the accuracy with which the irradiation dosage is measured and applied, and to the clinical judgment and experience of the physician in charge.

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Harold A. Fletcher, M. D. (490 Post Street, San Francisco).—In general it is my opinion that the operator in the surgical treatment of cancer of the

larynx tends to err on the side of conservatism, particularly in the early stages of the malignancy. The reason for this is, of course, the desire to preserve function of the voice. Another mistake often made is in attempting to attack a malignancy of a vocal cord intralaryngeally rather than through a laryngeal fissure, which I believe should be the method of approach in all but very exceptional cases.

Hemilaryngectomies or total laryngectomies can sometimes be made with the confidence that a cure will be brought about, provided the proper diagnostic study of the condition has been made previously. Both of these operations have saved many lives and resulted in permanent cures, but the percentage of recurrences is high, and the complications due to a permanent tracheotomy opening are frequent, and often disastrous and disabling. The difficulty of knowing whether the operation has been wide of the pathology is well known.

It is my belief that in most cases where any wide involvement is found, roentgen therapy should be used both before and after operation, or at least afterward.

The recent advances in the treatment of these conditions, with both x-ray and radium, are surely pointing to an increase in the percentage of cures. Radiologists deserve a great deal of credit for the promotion of this work. The laryngologists and the general surgeon will be only too thankful if the radiologist can take the carcinoma of the larynx case out of his hands and cure it with roentgen therapy. I do not believe that this day has yet arrived, but it may come in the near future. At present, I feel that we must stay with the careful study of the individual case, early diagnosis and the combined intelligent use of both surgery and roentgenology.

Robert S. Stone, M. D. (University of California Hospital, San Francisco).—Malignant tumors of the larynx have been cured so infrequently by the methods of treatment formerly employed that Doctor Garland is to be thanked for calling our attention to a method which, in competent hands, has given about double the percentage of cured cases. He has covered the subject very thoroughly in his paper, but there are two points which I would like to emphasize.

The method of treatment with protracted roentgen therapy depends for its efficacy on treating until the extreme limit of tolerance of normal tissue is reached. The cancer cells are killed by a dose of x-ray which is just slightly less than that required to kill normal tissue cells. The normal cells recover from a dose slightly more rapidly than the malignant cells. The repeated small doses hit cancer cells not quite so well recovered from previous doses as the normal cells. This means that a slight overdose could easily kill the normal cells and result in serious permanent damage. Therefore, this method of treatment must be tried only by those who have their roentgen apparatus thoroughly calibrated, and who understand the methods of procedure quite as well as the best surgeons understand theirs.

In the second place, I wish to emphasize the fact that the reactions are very severe. Most practitioners have never seen x-ray reactions such as these, and their first inclination is to exclaim, in the patient's presence, that he has received a severe "burn." The skin does appear much like that in the so-called x-ray burn, but it recovers very rapidly and has few or none of the late sequelae. If a patient of yours has to be treated in this way, please be guarded in the remarks you make in his presence about the reaction.

In closing, I wish to say that while the reactions are severe and the danger of complications is real, they are not comparable with the mortality rate in the best surgeons' hands or the handicap of being without a larynx. In the proper cases it is certainly the method of choice.

BACILLARY DYSENTERY*

By W. H. Kellogg, M. D.
Berkeley

THE diagnosis of dysentery depends on finding the etiologic factor. Some cases are clinically a simple diarrhea; but if their cause is one of the specific microbial agents, they are dysentery. Others present the complete syndrome of frequent loose or watery discharges with blood and mucus, tenesmus, fever, and prostration. The frequent occurrence of the mild type, with a low case fatality rate, renders its recognition and control difficult. The essential thing in establishing the diagnosis is the identification of the infectious agent which may be either bacterial or protozoan. Doubtless there are living agents as yet unknown; most certainly in the bacillary group, less certainly among the protozoan, and, it might be suggested, among the filterable viruses. True cases of proved specific infections may have symptoms so mild and transitory as to be indistinguishable from intestinal disturbance of apparently simple irritative origin. Even the supposedly classical phenomena of blood and mucus in the stools are not pathognomonic, and their absence does not rule out dysentery.

Dysentery is one of the annoying problems of the epidemiologist, who frequently must conclude his report with the statement that the source of the outbreak remains undetermined. In large part the sterile results are due to the evanescent nature of the illness, the trail being cold when attention is directed to the occurrence of an epidemic.

CLASSIFICATION OF ACUTE DYSENTERY

Leaving out of consideration amebic dysentery, which is not included in the scope of the present discussion, acute dysentery may be roughly classified as to cause into known bacillary types under which we can group, on one side, those caused by the Shiga bacillus, and on the other, those caused by members of the group of mannite fermenters, probably best spoken of as the Flexner group. Members of this group have been isolated and named from time to time, familiar names for individual strains being Flexner, Hiss-Russell, Strong, and the alphabetical group, V, W, X, Y, and Z, of the English authors, Andrews and Inman. To these must be added the Sonne bacillus, the Schmitz bacillus, possibly Alkalescens and Morgan's bacillus, and a new strain of the Flexner group recently isolated and studied by ourselves. Besides these bacteriologically identifiable cases, there are others occurring in outbreaks having the appearance of epidemics, the etiology of which is obscure and their inclusion as dysenteries of doubtful propriety. These acute diarrheas of unknown origin occur sometimes in quite extensive outbreaks, the individual cases being of short duration, but the outbreak extending over a period of days, even weeks, for a given locality.

San Francisco Bay Region Experience.—In the San Francisco Bay region last summer, hundreds of such cases occurred, the only thing in common

*From the Bureau of Laboratories of the California State Board of Health.

being residence in a particular city, the same water supply, and, of course, the same meteorological conditions. The water supply did not come under suspicion; it is the same for several East Bay cities and comes from the Mokelumne River, is stored in large reservoir lakes, is subjected to sedimentation, storage, and chemical treatment, and is the same the year round. Bacteriological examination of some of the cases was absolutely negative. Again, certain communities in the foothills and in the Sierra Nevada Mountains expect to have an epidemic of diarrheal disease every summer, and yet their water supplies are not subject to pollution. A prevailing theory in these places is that the trouble is due to the pine or tamarack pollen which is plainly evident in the storage reservoirs.

Santa Ana Outbreak.—A third class of undefined dysentery-like disturbance is that following the sudden pollution of a good water supply with raw sewage. In Santa Ana, some years ago, there occurred a spectacular outbreak of this sort consequent upon the backing up of sewage during a heavy rainstorm through a long-forgotten drain into the sump of one of the city's wells. There occurred immediately several thousand cases of diarrhea, and apparently clinical dysentery with nausea and vomiting. Although several hundred typhoid cases occurred after the usual incubation period, the primary gastro-intestinal disturbance was short-lived.

In October, 1930, a similar outbreak of acute gastro-intestinal symptoms without any prodromal period occurred in Charleston, West Virginia. In a population of sixty thousand, approximately eight or nine thousand persons were affected, but there were no deaths. This outbreak differed from the Santa Ana occurrence in that no following cases of typhoid occurred, and the water supply, a treated one, was known to be bacteriologically satisfactory. The raw water, however, was shockingly polluted because of the low-water conditions with an undiminished increment of sewage and industrial wastes. After treatment, the water still had a bad odor and taste, which were removed only by boiling. The toxic effect of the water also was removed in the same way. If the effect of boiling was not merely a chemophysical destruction of some non-living substance, one would be forced to the conclusion that some virus was present, not recognizable by bacteriological methods and not susceptible to chlorination. The successive development of similar outbreaks in other cities farther downstream confirms the waterborne origin of the illness. Epidemiologists have come to look with suspicion on a sudden epidemic with dysenteric symptoms involving large numbers of persons as indicating a sudden heavy pollution of the water supply with sewage, and an epidemic of typhoid and bacillary dysentery is confidently expected as the incubation periods expire.

BACTERIAL CAUSES OF KNOWN INFECTIOUS DYSENTERIES

To return again to the known infectious dysenteries and their bacterial causes. The earlier grouping by Hiss (1904) of the known strains of dysentery bacilli into four groups—Shiga, Flexner, Strong, and Y—served for several years; but increasing evidence of the propriety of relating all the mannite fermenters, which means all except Shiga, has resulted in their classification in England into one group, called the Flexner group. This is in recognition of Flexner's pioneer work in the Philippines in identifying bacillary dysentery not caused by the Shiga bacillus. The recent fourth edition of Bergey classifies all the dysenteries under Shigella after Castellani and Chalmers. Under Shigella are placed a number of individual strains and groups, the Shiga bacillus being called Shigella Dysenteriae, and all mannite-fermenting, well-known dysentery bacilli being grouped together under the name of Shigella Paradysenteriae. Bergey gives four definite strains under this group, namely, Hiss-Russell or Y, Flexner, Strong, and Sonne. The designation, pseudo-dysentery, was applied by Kruse when he found other types than the Shiga bacillus associated with asylum dysentery. This classification has not met with favor in England where, following Andrews and Inman, who are the most recent intensive investigators of the problem, all the mannite fermenters are grouped together as Flexner strains. As a consequence of the tremendous amount of dysentery in the armies of the World War and the bringing together of types from all over the world, work in this field by Andrews and Inman resulted in a study and comparison of strains isolated with the classical strains of various origins. There has very naturally been considerable confusion in identity as between cultures called Flexner in different laboratories, and those called Strong and Y; and Andrews and Inman found that cultures bearing similar names were not identical in different laboratories. The entire group is closely related and of complex antigenic structure, resulting in cross agglutination reactions to a confusing extent and often necessitating absorption studies to unravel the tangle. Added to this difficulty is the multiplicity of intermediate types, the biological characters not being fixed and immutable. The sugar reactions, aside from the basic ones of the lactose and mannite reactions, are not dependable, and the serological tests are the only practical means of differentiating. Andrews and Inman found, in the course of their investigations, that their V strain was identical with the Flexner of the Lister Institute and the Oxford strain of Lentz. Their W was the same as the Mount Desert Y of the Rockefeller Institute and the Strong of the American Museum of Natural History. Their Y was the same as the Y of Russell at Washington, and, also, the Y of Lentz in Berlin. Their X and Z strains did not correspond to any others. The use of the last five letters of the alphabet to denote different antigenic strains of the Flexner group was by decision of a committee of bacteriologists appointed by the War Office committee on dysentery, and the letters really apply to predominating antigenic components.

Outbreaks of Dysentery in California in 1933.—Last summer there was an unusual number of small outbreaks of dysentery throughout the state of California, and we received reports from local

laboratories of cultures isolated that were culturally Flexner dysentery, but inagglutinable with diagnostic serum. At the Los Angeles County General Hospital in particular was this experienced, and a number of the cases resulted fatally. Doctor Kessel very kindly sent me a number of these strains, and others were obtained from Pasadena, Long Beach, and Santa Ana. In our own laboratory the same thing occurred with specimens sent in from San Mateo, Vallejo, and Yreka. These strains, twenty-one in number, were studied as to their reactions in glucose, lactose, saccharose, maltose, mannite, xylose, inulin, raffinose, levulose, dulcite, galactose, arabinose, salicin, rhamose, and glycerin, and the indol, methyl red and Voges-Proskaur reactions. As a result they fell apparently into seven groups. One represented by three cultures not fermenting mannite was agglutinated by Shiga serum, while the others were not agglutinated by any serum. Immune sera were then prepared from each group, and by cross agglutination it was found that all the cultures, except the three Shigas and one other, were one and the same, being agglutinated to full titer by sera produced from other cultures of the collection. The preliminary grouping by sugar reactions was on a basis of differences other than in lactose, mannite, and saccharose, thus showing the uncertainty of sugar reactions in this group of organisms. Serum made with the new strain having a titer of 2,560 for itself does not agglutinate the American Flexner at all, the English strains, X, Y, and Z, up to 1-40, and the English strains V and W to a titer in some instances as high as 320. The organism is not agglutinated by American Flexner serum, only slightly by H-Y serum, not at all by the English W and Z sera, and to only 320 by V, X and Y. Apparently, on this coast at least, we must reckon with one more strain of the Flexner group (shall we call it a U?) which, added to the five antigenic types of Andrews, the Shiga, Schmitz, Sonne, and probably also Alkalescens, make a total of nine true dysentery bacilli to engage the attention of the diagnostic laboratories.

California Statistics of Years 1931 and 1932.—The reported cases of amebic dysentery in California for the year 1932 showed an increase of 5 per cent over the year 1931, whereas the bacillary cases showed an increase for the same period of 57 per cent. In 1933 the amebic cases were 60 per cent over 1932, all the increase coming in the last quarter when the news from Chicago was out. The increase for bacillary dysentery was during the same year only 6½ per cent. So far in 1934 amebic dysentery has continued to jump, the increase being at a rate for the year of 109 per cent, whereas bacillary dysentery shows an actual decrease of 33 per cent.

The indications are that interest in amebic dysentery is resulting in undue emphasis on this form in diagnostic laboratories. There is also reason to believe that some reports of amebic dysentery emanate from laboratories whose technicians are not properly grounded in the protozoölogy of the intestinal tract.

State Bureau of Laboratories, Berkeley.

ECTOPIC PREGNANCY—ITS RECOGNITION AND TREATMENT*

By J. Morris Slemons, M. D.
Los Angeles

Discussion *by George Wayland Coon, M.D., Riverside; Lyle G. McNeile, M.D., Los Angeles; L. J. Tiber, M.D., Los Angeles.*

DURING a residence of thirteen years in Los Angeles my records include seven instances of tubal pregnancy—a case every two years—representing an incidence of approximately one ectopic among three hundred pregnancies. On the basis of this experience alone, I should hardly be entitled to a hearing. But the number of cases in which a positive diagnosis is made correctly does not tell the whole story. Incorrect diagnoses are significant, and likewise pertinent are the more frequent cases of early uterine pregnancy in which the question of ectopic comes fairly into consideration, while the diagnosis is held in abeyance until a suitable interval of time has made the situation clear. Since women have become more and more inclined to adopt the sound principle of consulting a physician as soon as they suspect they are pregnant, obstetricians often have good reason to debate the question as to whether pregnancy exists; and, if so, where is it located—in the uterus or elsewhere?

REPORT OF CASES

Several of the cases in my short series, it happens, have presented features of general interest. One of them, for example, illustrates the well-recognized possibility of repeated ectopics. This individual was under my observation in four successive pregnancies: the first was normal in all respects; the second, a pregnancy in the right tube; the third, normal; and the fourth a pregnancy in the remaining left tube.

Another patient presented the much less frequent complication designated "combined pregnancy," co-existent pregnancies in the uterus and the tube. In this instance the treatment primarily was for abortion; the laboratory reported chorionic villi in the uterine curettings. After a week of smooth convalescence, the patient left the hospital. Three days later I was summoned hurriedly to her home and found her in collapse with the classical symptoms of intraperitoneal hemorrhage. At operation a ruptured tubal pregnancy was removed. It is not without interest that this patient has also had normal pregnancies, one before and another after the experience just related.

A third, more recent case, deserves mention because accurate differentiation between pelvic inflammatory disease and ectopic gestation could have been made only with the assistance of the hormonal urine test, which proved to be positive. The application of this test will greatly improve the statistics which show that formerly, when laparotomy was performed for a supposed unruptured tubal pregnancy, a tumor of some other origin was found in about half the cases.

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

It is well to recall that an accurate hormonal urine test is not always associated with tubal pregnancy. The test continues to be positive as long as living placental tissue remains. On the other hand, it becomes negative whenever hemorrhage separates the placenta from its attachment, and thus deprives the chorionic cells of nourishment. In these circumstances, as you know, the lumen of the tube becomes filled with intermingled blood-clots and masses of disintegrating placenta. Active bleeding ceases, distention of the tube is succeeded by an involutionary process, and nature attempts to work a cure. As the acute phase of the malady has passed, there is slight, if any, risk in the delay of surgical interference; and consequently the occasional unreliability of the test offers no serious handicap to treatment.

The fourth case selected for comment was subjected to what may be called an emergency operation for a reason not altogether orthodox. A tourist from the East, after skipping a menstrual period, began to have pain in the left lower abdominal quadrant and uterine bleeding. On examination, the uterus was found slightly enlarged and softened; the left tube, definitely palpable, was two to three times normal size. We were entirely dependent upon clinical findings, for at that time the hormonal urine test had not been devised, and an unimpeachable diagnosis could not be made. Operation was recommended; otherwise, the individual would have begun immediately a transcontinental railroad journey. An unruptured tubal pregnancy was found.

HORMONAL URINE TEST

At present, the hormonal urine test establishes the diagnosis of pregnancy efficiently, but does not, of course, indicate its location. With regard to that important detail not infrequently confusion still arises. Thus, in the presence of an early uterine pregnancy, doubt may be cast upon that diagnosis if at one side of the uterus a mass be felt suggestive of an ectopic, though actually due to a cystic ovary, an inflamed tube, an interligamentary cyst or myoma. Again, lateral flexion of the uterus may prove misleading, especially when the ovum is implanted near one cornu and the incidental congestion produces a longitudinal zone of softening so that the body of the uterus gives the examining fingers the sensation of two separate and distinct structures, just as happens with Hegar's sign. In these circumstances it is wise to defer the diagnosis until developmental changes have clarified the interpretation of what is felt. This recommendation is based upon personal experience, and will have the support of others who, upon opening an abdomen, have found a pregnant uterus where they expected a pregnant tube. To drive home this point, may I cite another case?

LATERAL FLEXION OF UTERUS: PREGNANCY NEAR CORNU

A patient, who had missed two periods, noticed slight spotting from time to time, and suffered pain in the lower abdomen. The pelvic examination could be variously interpreted: the uterus was enlarged and a small mass was palpable to the right; it seemed to be separate from the uterus. As she had consulted Dr. Phil Boller, approximately one year previously, on account of some pelvic ailment, I asked her to see him again and secure the benefit of contrasting the earlier with the present findings. Doctor Boller agreed with me in the diagnosis of ectopic pregnancy; but the operation proved we were incorrect. The pregnancy was in the uterus, and went safely to term. Experiences of this kind, you will agree, supply the best of reasons for urging delay when doubt arises as to whether a pregnancy is in the uterus or elsewhere.

My conservative attitude may hardly be misunderstood. It certainly does not apply to tubal rupture and tubal abortion with intraperitoneal hemorrhage. There prompt operation becomes imperative, an urgent life-saving measure. On the other hand, if rupture has not occurred and the diagnosis is uncertain, time should be taken to secure the information afforded by the hormonal urine test.

PROCEDURE IN OBSCURE CASES

More especially, would I emphasize the desirability of avoiding the mistake of operating for a supposed ectopic when the pregnancy is actually within the uterus. This requires patience. Diagnosis should be deferred for a period sufficient to determine whether the uterus will enlarge as customary with normal pregnancy. Meanwhile, of course, the case must be regarded as a potential emergency. The patient will be advised to restrict her activity; if expedient, even to remain in bed. She will be visited once a week; supervision will include both the prompt report of symptoms she may observe, and the anatomical changes revealed by repeated pelvic examinations. This plan may be adopted safely whenever the patient lives where an ambulance service may reach her promptly. If not, she should go to a hospital and remain under observation until the facts gathered make certain that it is safe for her to leave.

In my own practice, thus far, it has proved satisfactory for such patients to remain at home. Nine times out of ten the pregnancy ultimately proves to be in the uterus. Only once have I seen tubal rupture occur before an accurate diagnosis could be made. In this instance, the patient was sent to the hospital immediately and the needful operation performed without handicap. Satisfactory results will depend chiefly upon conscientious observation, which is obviously more welcome to patient and physician alike than unnecessary exploration of the abdomen. The unpleasant consequences of mistaking a normal pregnancy for something else are not quickly forgotten by anyone concerned with the incident.

SUMMARY

As soon as it is recognized, the treatment of ectopic pregnancy should be surgical:

1. Tubal rupture and abortion with intraperitoneal hemorrhage urgently require immediate operation.

2. In doubtful cases of unruptured tubal pregnancy the urine hormonal test has greatly improved accuracy of diagnosis.

3. Where pregnancy is known to exist, but its location, in the uterus or elsewhere, is uncertain, the most satisfactory results are obtained by patiently awaiting the developmental changes which eventually clarify the situation.

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DISCUSSION

GEORGE WAYLAND COON, M. D. (3770 Twelfth Street, Riverside).—In the discussion of this paper on ectopic pregnancy by Doctor Slemons, I will attempt to briefly present a very interesting case of abdominal pregnancy we operated about two months ago. The mother and baby are both alive. The mother left the hospital this week and is about the house, and the baby is apparently normal and now weighs eleven pounds. This pregnancy had its onset during a rather subacute salpingitis, there being a profuse leukorrhea, some fever, and bilateral pelvic tenderness. She gave a history of some pain at about the third or fourth week, when she probably had a tubal rupture, but there was apparently very little bleeding. I saw her first about a month later when she came to me for obstetrical care. She was having considerable leukorrhea, not bloody, and some general lower abdominal cramps and tenderness.

From the third to the sixth month she felt well and progressed nearly as any pregnancy; then the movements of the baby began to be very painful, and she had great trouble with gas and constipation. Roentgen rays, taken at about six and one-half months, made the diagnosis of an abdominal pregnancy much more certain. She was then watched very closely, and was operated at eight months. A normal 7½-pound baby was found free in the abdominal cavity, with no evidence of hemorrhage or of an amniotic sac. Placenta was attached to the cecum and sigmoid, and to several loops of small bowel, also to posterior peritoneum, bladder, and lower anterior abdominal wall. About two-thirds of the placenta was removed. There was considerable difficulty in controlling bleeding. One blood transfusion was given previous to the operation, and three more the following week.

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LYLE G. MCNEILE, M. D. (523 West Sixth Street, Los Angeles).—Doctor Slemons has discussed a puzzling case in which operation demonstrated that a mistake in diagnosis had been made, and that instead of an ectopic pregnancy there was an intra-uterine pregnancy; and I agree with all of his conclusions. The results of ruptured tubal pregnancy are so disastrous, except when immediate operation is undertaken, that I feel that the best interests of the suspect patient are best conserved by opening the abdomen, even though in an occasional case operation reveals that an incorrect diagnosis has been made. In our experience at the Los Angeles County General Hospital, we find that the greatest mistake in diagnosis is made in confusing a threatened or incomplete abortion with an extra-uterine pregnancy. Regardless of how sure the clinician is of his diagnosis, it is advisable in every case of either abortion or extra-uterine pregnancy to carefully consider the differential diagnosis between the two conditions. At the County Hospital we have for many years performed autotransfusion on cases of extra-uterine pregnancy having free blood in the abdomen at the time of operation. This is a simple procedure, does not require any blood grouping or any other laboratory work, and the results have been so extremely satisfactory that I feel free to recommend the procedure without reservation.

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L. J. TIBER, M. D. (3875 Wilshire Boulevard, Los Angeles).—Since the treatment of ectopic pregnancy is so well established, one can hardly disagree with the author regarding the advisability of immediate operation after the diagnosis has been established. However, a new phase in the treatment of ruptured ectopic gestation deserves mention. Autohemofusion is perhaps one of the most important additions to our armamentarium. With a patient in shock, time is an important factor, and the procedure of using a patient's own blood for transfusion is of considerable value because it saves time: there is no necessity for obtaining and typing donors, the expense is greatly decreased, and it can be done by anyone and at any place.

Since my report in this JOURNAL of over one hundred autohemofusions in ruptured ectopic gestation, there have been over fifty more without a fatality nor any demonstrable morbidity. May I, therefore, urge the profession to acquaint themselves with this procedure, and thereby become better able to combat shock and hemorrhage in ruptured tubal pregnancy?

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DOCTOR SLEMONS (Closing).—I should like to congratulate Doctor Coon on the excellent result in the case he reported. Out of modesty, no doubt, he failed to include in his remarks some of the details he related to me in private conversation. His contribution has added materially to the full discussion of my essay. I am grateful to him and to all who have taken part.

CHRONIC ARTHRITIS—ITS TREATMENT*

By RUSSELL L. CECIL, M. D.
New York City

II

I SHOULD now like to describe the methods of treatment which the writer has found most satisfactory in his own practice.

AUTHOR'S PROCEDURE

Rehabilitation.—The writer's method of treating rheumatoid arthritis can be summed up in one word "rehabilitation"; that is, a general building-up of the whole human machine to a point where the patient is able to throw off the infection. This process of rehabilitation should begin with rest, either at home or in a sanitarium. There are very few sanitariums that exist solely for arthritics. The patient who wishes sanitarium treatment must usually go, therefore, to some general sanitarium. I often put the arthritic patient in a local hospital for intensive study and treatment, and then after four to six weeks of observation, send him away to rest in the country or to some first-class sanitarium. Patients with mild infections will usually refuse to give up their daily work and routine, and such patients must take their rest at home. They are advised to spend two or three hours in bed every day, in addition to long hours of sleep at night. The rest must be not only physical, but mental and emotional. Preferably, the mother should be away from her housekeeping and children, and the father should be absent from his business. In order to get the full benefit of the rest cure, it should be kept up for three to six months.

Focal Infections.—I believe that focal infection is fundamental in the etiology of rheumatoid arthritis, and I therefore believe that the removal of focal infection is the keystone to permanent relief of symptoms. Rest alone will often restore the arthritic patient to a complete freedom from

*Guest-speaker paper, read before the General Medical Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934. Part I was printed in October issue, page 217.

symptoms, but unless the primary focus has been removed, a recurrence of the disease is very apt to take place within a year or two.

I have several other convictions about focal infections. I believe that the tonsil is the most frequent portal of entry for bacteria; infected sinuses come second; infected teeth are probably third in importance. I believe that time is a tremendously important factor in the removal of foci; in other words, unless the focus is removed early in the course of the disease, the benefits obtained from such removal are not striking.

A great deal of success in the treatment of focal infection depends on *who* removes the focus. A tonsillectomy performed by a clumsy operator is more apt to bring on an exacerbation of joint symptoms than it is to cure the patient. I believe that it is better treatment to remove the focus and then build up the patient, than it is to build up the patient and then remove the focus.

Climate.—The rheumatoid patient undoubtedly feels better in a dry, hot climate. We physicians who practice along the Atlantic coast send a good many patients to Southern California, Arizona and New Mexico. Florida and the West Indies are sometimes helpful, but the atmosphere lacks the dry quality of the southwest. But here again results depend on *when* the patient seeks the remedy. Patients with advanced cases of rheumatoid arthritis are often greatly disappointed over the results they obtain from a change of climate. The joints have been so severely damaged that recuperation is impossible.

Diet.—I think that there is some value in a low carbohydrate diet for rheumatoid as well as osteoarthritis, though I do not insist on it in patients who are below weight. It is excellent therapy, of course, for the overweight patient. In patients who are underweight, the physician can substitute fat in the form of cream, butter, etc., for the usual carbohydrate quota.

Vitamins.—I have already spoken of the use of vitamins in the treatment of rheumatoid arthritis, and have indicated my belief in their value as a form of therapy. In my own practice I make use of some of the well known combinations of haliver oil or cod-liver oil with viosterol, and supplement these with tomato juice and orange juice, and some one of the wheat germ products, such as embo or bemax.

Elimination.—The bowels, of course, should be kept well open. Elimination through the bowels, bladder and skin is a fundamental tenet in our therapy. As I have already indicated, Snyder is a great advocate of colonic irrigations. Fletcher, though he believes strongly in the importance of the colon in the etiology of rheumatoid arthritis, is opposed to colonic irrigations. The correct answer must be somewhere between these two extremes. In other words, the bowels should be kept open, but preferably by natural methods.

Secondary Anemia.—The rheumatoid patient tends to develop a secondary anemia. Sometimes this becomes quite severe. In advanced cases transfusions are indicated, but ordinarily some of the iron mixtures, such as ferric ammonium citrate or reduced iron, serve the purpose perfectly well.

Massage.—There is some debate among physicians as to whether massage is indicated in the treatment of arthritis. My own rule is to avoid massage until the active stage of the disease is passed; in other words, I never massage a hot tender joint. I feel somewhat the same way about exercises. Passive movements, of course, can be sparingly used in order to prevent ankylosis, but active exercises should be deferred until the acute stage of the inflammation is past.

Physiotherapy.—Other forms of physiotherapy are sometimes helpful, especially the ultraviolet light, though I would greatly prefer natural sunlight. Diathermy and the infra-red light may be useful where symptoms are localized chiefly in one joint. I have already spoken of the use of diathermy in the production of hyperthermia or artificial fever. The exact value of this method of treatment has yet to be determined.

Hot Baths.—I do not believe many of us realize how easily a temperature of 103 to 104 degrees Fahrenheit can be achieved by the simple expedient of a hot bath. If a patient, for example, is put into a tub of hot water at a temperature of 106 degrees Fahrenheit for twenty minutes, he will develop several degrees of fever. This, no doubt, explains in part the beneficial effect of hot baths for all kinds of rheumatic conditions.

Streptococcus Vaccine.—Streptococcus vaccine has become quite popular during the past few years in the treatment of rheumatoid arthritis, largely because so much evidence has accumulated that this disease is caused by some form of streptococcus. There is no time here to go into details of the modern bacteriological work along this line; but as evidence has accumulated that rheumatoid arthritis is a streptococcus infection, physicians have turned once more toward vaccine therapy in the hope that new methods of preparation and administration might lead to tangible results. This hope has been in part realized. Streptococcus vaccine is administered either subcutaneously or intravenously. The writer's methods of administering streptococcus vaccine are as follows:

Subcutaneous Method. — The streptococcus hemolyticus vaccine contains one billion streptococci to each cubic centimeter of vaccine. The first dose is 0.05 cc. Each succeeding dose is increased by 0.05 cc., but never exceeds 1 cc. If the patient has a severe local or mild general reaction with definite increase of joint pain following the injection, the previous dose of vaccine is repeated, or the amount reduced.

Intravenous Method.—The streptococcus vaccine is made up in various dilutions. Dilution No. 1 contains one million streptococci to 1 cc. of vaccine. Dilution No. 2 contains ten million streptococci to 1 cc. of vaccine. Dilution No. 3 contains 100 million streptococci to 1 cc. of vaccine. The first dose is 0.05 cc. of vaccine of dilution No. 1, intravenously. Each succeeding

dose is increased by 0.05 cc. When a dosage of 1 cc. has been reached, treatment with dilution No. 2 is started with 0.1 cc., increasing the dosage as before.

In both the intravenous and subcutaneous methods the interval between doses should be four to five days.

A large part of success in vaccine therapy depends on the persistence with which it is prosecuted. As a rule, very little benefit can be expected during the first two or three months of treatment. The injections should therefore be continued for at least three to four months. If improvement occurs, the treatment is continued. If no improvement occurs, streptococcus vaccination is either discontinued entirely or some new form of vaccine therapy is substituted.

Typhoid Vaccines.—In patients who are running a fever and who have actively inflamed joints, a series of foreign protein reactions with typhoid vaccine sometimes works wonderfully well. In our clinic we start with 50 to 100 million typhoid bacilli intravenously, and repeat the injection every two to three days until the patient has had six to eight reactions. If some care is taken in the selection of patients for this form of therapy, no untoward results will be encountered. The obvious counterindications are old age, weak heart and a history of pulmonary tuberculosis.

Orthopedic Measures.—So far I have said nothing about orthopedic measures in the treatment of rheumatoid arthritis. Orthopedic treatment is most important in spondylitis of the Marie-Strümpell type, and in arthritis of the hip and knee. Deformities or ankyloses in any of these localities lead to great discomfort on the part of the patient. For spondylitis, exercises and some sort of brace or corset are indicated to prevent the extreme kyphosis which often develops in these patients as the disease advances. Various orthopedic devices are in use to prevent contractures of the hips, knees and elbows.

Drug Therapy.—The drug treatment of arthritis can be quickly covered. Arsenic in the form of the cacodylates or salvarsan is a splendid tonic, and seems to work particularly well in arthritic patients. Personally I have been disappointed in the results obtained from the various forms of sulphur. My experience with the gold salts has been too limited to permit of an opinion, but certainly the results reported from France and England are very encouraging.

IN CONCLUSION

We physicians often speak with frank skepticism concerning the various measures employed in the treatment of rheumatoid arthritis, but isn't this skepticism due to the fact that too often we have to treat arthritics in the advanced stages, after the disease has been neglected either by the patient or by some other physician who took no interest in the patient's condition? I must confess that I dislike to treat advanced cases of rheumatoid arthritis, because I know that comparatively little can be done to cure them. I feel quite differently, however, about incipient cases. I take considerable satisfaction in attacking early cases of rheumatoid arthritis and watching the patient improve under the effects of therapy. In other words, the situation is not different in arthritis from that in tuberculosis or syphilis. The early cases yield well to treatment. The advanced cases are extremely stubborn. No doubt, as time passes and physicians become more familiar with modern methods of treatment, advanced cases of rheumatoid arthritis will not be so numerous, and there will be fewer invalid chairs in our poorhouses.

33 East Sixty-first Street.

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TREATMENT OF FRACTURES—BY THE BÖHLER METHODS*

By Ralph Kaysen, M. D.
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Discussion *by Maynard C. Harding, M. D., San Diego; Fraser L. Macpherson, M. D., San Diego; Sterling Bunnell, M. D., San Francisco.*

IN the past few years, increasing major injuries consequent upon automobile and industrial accidents have renewed interest in the treatment of the frequent fractures occurring as complications. Volumes have recently been written on treatment, apparatus and technique relating to fractures. Lorenz Böhler of Vienna has been credited with having pioneered in many of the more radical procedures which are rapidly becoming universally recognized in competent fracture treatment.

*Read before the San Diego County Medical Society on April 10, 1934.

THE BÖHLER CLINIC AT VIENNA

The writer has recently had the opportunity of spending ten months with Böhler at his hospital. During this time he proved very cordial, and presented the freedom of his clinic, his staff, and his associates. Attendance at operations, ward walks, staff conferences, and practical participation form the basis for remarks herewith presented.

His clinic is the Mecca for men from all countries, there being an average gallery of from twenty to thirty visiting surgeons. His reputation with these visitors is that of being somewhat didactic and difficult to approach. He explained that this reputation was the result of his having been disappointed by the large majority of his visitors spending so short a time with him that they were unable to grasp the full import of his technique and principles.

He does not claim originality for his methods. Having selected certain principles which have stood the test of time, he has evolved an orderly technique, with the application of modern apparatus, which has resulted in a comparative standardization of treatment and an improvement in end-results.

The "Unfallkrankenhaus" is an accident hospital occupying the two top stories of a modern building owned by an accident insurance company and operating under the supervision of the state. Patients injured in industry are cared for under State Compensation Insurance regulations. The director of the insurance company supervises all matters pertaining to compensation and disability benefits. All internal administration in the hospital, and the control of the patients, is under the supervision of Doctor Böhler, who is the chief surgeon. He is in a position to maintain a strict discipline over his staff and the patients. The staff consists of two chief assistants, three to five other assistants whose services rotate in different departments, lay orderlies, and female nurses. There are one hundred beds, arranged in from two to ten-bed wards, with a few private rooms for the more serious cases. There are two main operating rooms, a plaster room, a sterilizing and dressing room, an x-ray room and a service room, all connected in series. The equipment is complete but not elaborate. Close attention is paid to rigid economy in all departments.

THEORY AND PROCEDURES IN TREATMENT OF FRACTURES

The theory of the treatment of fractures consists in early reduction, and restoration of the fragments to a position in which the distal fragment is replaced in the same axial plane and direction as the proximal fragment, followed by immobilization in traction or fixation in a suitable splint. Fixation is not interrupted until firm union of the fragments results. Early active mobilization of the parts contiguous to the fracture, for promotion of circulation and prevention of atrophy of the soft parts, is instituted. This mobilization prevents restriction of motion in the contiguous joint. The use of massage, passive motion and moist heat for restoration of function is scrupulously avoided. Dry heat and diathermy are occasionally used to hasten the restoration of motion in the joints. Compound, uninfected fractures are transformed to closed, by primary suture of the laceration, closed treatment being followed thereafter. Infected compound fractures are treated in the usual manner, with a window in the cast for drainage and inspection.

All incised wounds and lacerations have a complete debridement, including the skin, soft tissues and bone, with primary suture of the skin only. No attempt is made to repair tendons, ligaments or nerves, except in cases in which the incised wounds are unsoiled or without laceration. Such repair as is necessary is done after the original wound has healed.

After repair, wound areas are exposed to the air without dressing of any form. Infected wounds with secretions and crusts, have the latter removed only at long intervals. No medicaments are applied to the wound areas. Biological preparations, such as vaccines or antitoxins, are not used. Rarely prophylactic doses of anti-tetanus serum are given. Drains are used only if a vacant space exists in the primarily sutured area.

For severe contusions, sprains, and local infections the affected parts are put completely at rest by the use of the airplane for the arm, and the Braun splint for the leg.

In the after-treatment of all fractures of the lower extremity, zinc gelatin dressings are applied from the toes to the knee. If the injury is above the knee, elastic bandages are used for the knee joint.

In bone surgery all sutures under the skin are of non-absorbable materials, such as silk and linen. All burns are primarily debrided, if there is a destruction of tissue, then painted with tannic acid and kept elevated and at rest until healed.

When it is impossible to reduce and maintain the position of fragments by plaster splints or other apparatus, Steinman pins or Beck wire are passed through the bones, and traction is then applied with the screw traction apparatus. Forearm and lower leg fractures are maintained in position by the pins and wire, incorporated in the plaster of paris. After the removal of the pins and wire, traction is maintained by incorporating straps in zinc gelatin, or adhesive straps attached to the skin or to the plaster splint.

The use of Steinman pins or Beck wire provides a firm base for the traction apparatus and, in plaster, a firm fixed point for maintaining position. They do not cause soft tissue damage, and only temporarily injure the bony structures in which they are placed. Infections very seldom occur.

THE NON-PADDED PLASTER CAST

These casts require specially prepared material. Two sizes only of bandages are used: those for the extremities are made from a loose mesh gauze 15 centimeters wide by 5 meters long; those for the body and spine cast are 20 centimeters wide and 5 meters long; the plaster of paris used is of the slow-setting variety. The bases of the casts for the extremities are a posterior splint for the leg, and a splint over the extensor surface of the arm. Fractures of both bones of the forearm

require an additional short splint over the flexor surface. These splints are held in position by a moist gauze bandage which in application is never reversed over the soft parts, always over the splint. The splint is carefully smoothed and moulded to the contour of the part, then a circular plaster bandage is applied and moulded. Casts on the forearm are commenced at the head of the metacarpals; they allow of complete flexion and extension of the fingers and thumb. Casts on the leg extend to the limit of the toes on the plantar surface and to the web of the toes on the dorsal surface, thus allowing free movement of the toes without plantar flexion. No padding is used on the extremities, except over the tibial tubercle, the spine, and the iliac crest.

Under the plaster dressing, all wounds are covered with a thin layer of gauze which is held in place by mastisol; windows are cut in the cast and the parts are exposed without dressing. No dressings are used on the entrance or exit of the Steinman pin or Beck wire, the theory being that the plaster of paris is sterile.

GENERAL MATERIAL

Fracture beds are made low for the care of the patient, and boards are placed between the mattress and the springs so that no sagging of the parts may occur. At the head of the bed is attached a curved rod with a stirrup, for the use of the patient in moving himself by lifting with his arms. A balkan frame for femur and pelvic fractures is used, comprising two upright parallel bars with an overhead cross bar; the lower bar is slotted for pulleys.

All fractures and severe injuries of the lower extremity, including the pelvis, have the injured leg placed on a Braun frame immediately; this provides immobilization and rest with elevation of the parts.

All fractures and severe injuries of the upper extremity have the injured arm placed in an airplane splint to provide immobilization, rest, and elevation of the parts.

Rustless Steinman pins are introduced for skeletal traction of the lower extremity and frequently for the upper arm. Beck wire is used in the forearm, and soft rustless wire for extension for the fingers and metacarpals, toes, and metatarsals.

The Böhler redresseur provides a means for moulding fragments in fractures involving the os calcis, malleoli, and tibial tuberosities.

The screw traction apparatus consists of a gas pipe frame placed on a table, upon which the patient may have skeletal traction applied to the extremity. There are provided fixed points of countertraction, in the popliteal space and perineum for the leg, and in the elbow and axilla for the arm. Traction is applied by means of a slack screw and stirrup attached to Steinman pins placed in the bone of the injured extremity. Between the screw and the stirrup is interposed a spring scale for measuring the amount of traction. The pull from the slack screw is in the long axis of the bone. Angular manipulation is possible by hand. The injured part is placed in plaster, while traction is maintained. The position of the fragment is determined by palpation and fluoroscopic inspection. This apparatus may be disassembled and is portable.

ANESTHESIA

Local infiltration of two per cent novocain is attempted in all fresh fractures. Ten cubic centimeters are injected with a long needle at the fracture site, then the syringe is removed from the needle; if the solution returns colored with blood, indicating that the hematoma has been reached, 15 to 60 cubic centimeters more of novocain are injected. The pain is thus immediately relieved, the spasmodic muscles are relaxed, and reduction can proceed. Dislocations and tears of capsule and ligaments are freely infiltrated over a wide area.

Regional anesthesia is necessary in surgery or extensive manipulation of the extremity. For the leg, 1 per cent novocain, spinal, is used; 8 cubic centimeters of the spinal fluid are withdrawn and replaced with 8 cubic centimeters of fresh novocain solution. The patient is then placed flat on the table, the Trendelenburg position not being observed.

Twenty-five cubic centimeters of 2 per cent are injected into the brachial plexus for arm anesthesia; the subclavian artery is palpated and displaced medially, and the needle is inserted one or two centimeters under the skin; the patient is instructed to announce when a shock is felt in the fingers and elbow, at which time the entire amount is injected.

Should regional or local anesthesia not be effective, ether is given by cone, with ethyl chlorid induction.

GENERAL OUTLINE OF TREATMENT

All reductions are made preferably by the closed method and manual manipulation. Skeletal traction is employed when reduction is impossible by the usual means. The position of the fragments is maintained either by weight extension or incorporation of pins or wire in the plaster cast. Open reduction is resorted to in fractures of the olecranon and patella with separation of fragments, also in non-union. Proper reduction is made in ununited fractures and fractures of the olecranon, the fragments being held in position with heavy wire sutures. The patellar fragments are replaced in position and the fascia carefully repaired by linen sutures.

Fixation is maintained in the original apparatus for certain definite periods, depending on the location of the fracture. Fractures of the femur require eight to ten weeks, of the humerus four to six weeks, of the tibia six to ten weeks, both bones of the forearm eight to twelve weeks.

Reduction is made immediately in all fractures, except those involving the lower leg, ankle and foot. In the latter cases, the leg is kept on a Braun frame for one week until the swelling has subsided.

Active motion of fingers, toes, and all neighboring joints which will not disturb the position of the fragments, is commenced immediately and maintained throughout treatment.

REGIONAL TREATMENT

Spine.—The Böhler theory for prevention of the prolonged disability resulting from ordinary spinal injuries, such as compression fractures of the bodies, is that primary reduction must be followed by early exercising of the spinal and other body musculature. Also that, following the period of immobilization necessary for the repair of the injured vertebra, no supporting apparatus is necessary. If the muscle function has been maintained by activity, and bony damage has been properly repaired, no basis in pathology should exist for physical disability beyond the time required for recovery in other similar injuries to bony structure.

Compression fractures, without neurological disturbance, are reduced by hyperextending the spine after the areas affected have been anesthetized by injecting 50 cubic centimeters of 2 per cent novocain directly against the body of the injured vertebra. The patient is supported in the position of hyperextension for thirty minutes; then a body cast is applied from the axillae to the greater trochanters of the femurs.

At the end of one week, gymnastics are commenced. They consist in raising the body by means of trapeze rings, raising the body at the hips over the edge of a bed, raising the legs with weight on the abdomen, and carrying increasingly heavy weights on the head. The body cast remains in position three to four months; after its removal no appliance is placed. The gymnastics continue for two to four months longer.

A definite technique has been planned for almost all forms and combinations of fractures. This technique is meticulously carried out in every case, and is standardized insofar as individual cases will permit. Several outstanding examples of treatment have been chosen for exposition, since they differ markedly from the practice generally followed.

Femur. — Intertrochanteric, trochanteric, and fractures of the shaft, are treated by weight extension. The patient is placed in a fracture bed, novocain injected in the fracture site, and a Steinman pin is driven through the tibial tubercle. Twenty pounds of weight is suspended from a balken frame and attached to the pin by means of a stirrup. The foot of the bed is elevated twelve inches, in which position the weight of the body acts in countertraction. The leg is then placed on a Braun frame in a degree of abduction, depending on the location of the fracture. At the end of three weeks the pin is removed, to prevent overstretching of the knee ligaments, and ten pounds of weight each are attached to the thigh and the leg, by means of zinc gelatin with straps incorporated. The persistent posterior displacement of the distal fragment, in the supercondyler region, is overcome by sliding the Braun frame proximally, until the knee angle of the frame is directly beneath the fracture site.

Humerus.—Supra- and intracondylar fractures of this bone have had a high percentage of malunion, and are frequently complicated with ischemic contractures of the forearm and hand (Volkman's contracture). Reduction is made by either manual or screw traction. During reduction, and when placed in plaster, the forearm is held in extreme pronation. The latter position relaxes the spasm of the pronator radii teres, allowing correction of the medial angulation of the fragments. The arm is then placed in plaster with the elbow at right angles, and on an airplane splint. Extension is applied to the upper arm portion of the cast by means of a spring on the airplane apparatus.

Os Calcis.—Fractures in this bone result from the astragalus being driven into the cancellous bony structure as a wedge. Usually there is a comminution, with longitudinal and transverse splitting, which produces plantar and lateral angulation.

The normal angle of the superior articulating plane and the tip of the tuberosity of the os calcis is about 30 degrees. This angle is greatly widened after a fracture, and must be corrected to restore normal function.

Reduction is accomplished by placing Steinman pins, one through the insertion of the tendo Achilles, the second a handbreadth above the ankle, and through the soft tissues posterior to the tibia; traction on the screw traction apparatus is then applied, first in the longitudinal axis of the leg, second at an angle of 45 degrees thereto. Lateral displacement is corrected with the redresseur. Plaster is applied, the leg put on a Braun frame for three to five weeks. The patient then becomes ambulatory on a walking iron for a period of nine to fourteen weeks additional. Zinc gelatin and arch supports are used after the removal of the plaster.

Carpal and Tarsal Phalanges, Metacarpals and Metatarsals.—Fractures of these bones have previously given uniformly poor results.

The Böhler treatment consists of incorporating a loop-wire splint in a cast on the extremity. This splint is at first placed parallel to the digit affected, and on the flexor surface. Through the pulp of the distal segment is passed a rustless wire; this is attached with light tension to the free end of the splint; the wire splint, together with the digit, is then flexed to mid-position; the extension is maintained for three or four weeks. Free movement of the remaining fingers or toes, to maintain function, is thus possible.

The Walking-Iron.—This consists of a piece of strap iron with small cross pieces at either end, which is bent in "U" shape and attached by plaster bandages over the leg and foot cast, parallel to the long axis of the leg. The free lower portion extends the width of the heel of the opposite shoe, distal to the heel portion of the cast.

Patients with fractures below the knee have this iron placed and are made to walk immediately, or within forty-eight hours after injury. Exceptions to this rule are fractures of the os calcis and astragalus, in which cases bed treatment on a Böhler frame is necessary for the first three to five weeks, following which the walking-iron is placed.

It is possible for patients to walk with this iron, for the reason that the non-padded cast prevents any displacement of the fragments. Early union

is stimulated, the limb does not atrophy, fibrous ankyloses in neighboring joints are prevented, and the morale of the patient is greatly improved.

COMMENT

An exposition of the technique covering the many additional fractures and skeletal repair procedures, would require hours for presentation. The few examples here outlined will serve to illustrate the departure from the older accepted forms of treatment. They include the basic principles and theories of Böhler's work.

The success of the application of Böhler methods of treatment for fractures and other trauma requires a thoroughly organized staff, a careful selection of material, and a constantly minute attention to details of technique and after-treatment.

The principles of reduction and maintenance of position of the fragments are physiologically and mechanically sound. The practice of early mobilization of the soft parts, and joints contiguous to the fractured member, prevents atrophy, adhesions and ankylosis.

The non-padded plaster cast, if properly applied, provides perfect immobilization, prevents angular deformity, and is comfortable for the patient. The danger of pressure disturbances is less than in the use of other constrictive appliances.

The employment of the walking-iron attached to leg casts, allows early ambulation, lessens length of hospitalization, stimulates the bony repair, and raises the morale of the patient.

Treatment of wounds by adequate debridement, primary skin suture, with complete rest and elevation of the parts, results in few infections and early repair. Infections treated by immobilization of the affected parts, free incision and drainage with complete rest, have a short duration, and result in the minimum of tissue destruction and contractures.

Metal pins and wire for skeletal traction provide a most effective method for fracture reduction and immobilization. The much-feared infection or destruction of bone or soft tissues seldom follows their use.

IN CONCLUSION

In general, in the opinion of the writer, the Böhler methods have made possible great advances in the treatment of fractures and trauma. In some instances end-results are disappointing and are comparable to older methods. However, the large majority of cases observed force the conclusion that the many years of tireless efforts, concentrated in his special field, have entitled Lorenz Böhler to an outstanding position among modern surgeons.

These methods, applied in the treatment of injuries, result in a lessened disability period, an earlier return to the proper industrial status of the patient, a shortened period of hospitalization, and the least possible impairment of function. The morale and physical well-being of the injured are enhanced, and economy to society ensues.

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DISCUSSION

Maynard C. Harding, M. D. (861 Sixth Street, San Diego).—Doctor Kaysen has given a readable résumé of Doctor Böhler's methods. Much of the latter's work is like our American procedures, but some of it is quite different. Any description of Doctor Böhler's work would of necessity sound stereotyped, as it could not convey the high personal skill which enables him to modify his various standard methods to fit the individual case.

It must be remembered, in fact, that many of his operations, while appearing simple, are really only for the very skilled and cannot, therefore, be done outside a well-organized hospital.

In this day of multiplying surgical and mechanical procedures, Doctor Kaysen does us a kindness in recalling to mind the fact that personal skill plus simple apparatus is, after all, an ideal not to be lost sight of.

Fraser L. Macpherson, M. D. (610 Medico-Dental Building, San Diego).—Doctor Böhler has undoubtedly made possible great advances in the treatment of fractures and trauma, and his experience with certain types of fractures is gradually and generally serving as a guide to many practitioners throughout the United States.

In order to carry out the Böhler procedure it is necessary, of course, to follow his technique, which has been so carefully worked out over a period of years. In other words, if non-padded casts are to be used, it is essential that the bandages and plaster are made in accordance with his specifications, as it is impossible to put on a non-padded cast satisfactorily with many of the bandages ordinarily used. Not all of his procedures are adaptable to conditions we meet with in this country.

The experience Doctor Böhler has given us in the use of traction pins for fractures of the extremities has undoubtedly eliminated the necessity of many open operations and has aided materially in decreasing the period of hospitalization, both of which are very important factors in this present economic crisis.

Sterling Bunnell, M. D. (516 Sutter Street, San Francisco).—In the treatment of fractures the greatest advance in recent years has been made by Dr. Lorenz Böhler, who has compiled and developed a system superior to that commonly in use. The time of treatment and the amount of permanent disability are much shortened. Total compensation expense, as shown in his 1930 report of the Accident Hospital in Vienna, was reduced to 41 per cent. The greatest saving in the order of the amount was in fractures of the lower leg, forearm, tarsus, femur, and humerus. Since these figures were published, his treatment of back injuries by athletics has further reduced compensation expense.

I have visited Doctor Böhler's clinic, and for five years have used his methods with increasing satisfaction.

Among the essential principles are early setting, use of local anesthesia, and the elevation of limb. The setting is accurate by skeletal traction between two fixed points on an apparatus and in the proper direction of pull. With the limbs suspended in this position the plaster casing is easily applied. The non-padded feature prevents movement. The pins may be embedded in the plaster, and if they are kept immobile infection is extremely rare. Functional treatment, by the walking cast in the lower extremity and by active use in the upper limb, greatly shortens convalescence and improves the result.

The methods when used by those insufficiently qualified are fraught with danger. When applied, however, by those who have keen comprehension of mechanics, and have paid the price by thorough study of the principles, both safety and success are assured.

AUTODESENSITIZATION OF ALLERGIC CONDITIONS*

By Herbert A. Johnston, M. D.
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Discussion *by Hyman Miller, M. D., Los Angeles; Albert H. Rowe, M. D., Oakland; V. G. Alderson, M. D., Oakland.*

DESENSITIZATION of the allergic patient is the hope of the allergist. To accomplish this end, several methods have been tried and in many instances found to be satisfactory. Usually the best results are obtained when the cause has been definitely found, or the offending allergen has been discovered either in the patient's diet or his contacts. Theoretically, the skin test should reveal the cause and point directly to the remedy. However, this frequently does not occur, and for this reason several cases have been considered at our clinic from another viewpoint during the past year or more. Several different clinical states have been analyzed with the belief that allergy is quite common, and that many persons are in ill health from some form of sensitization. The problem of desensitization becomes difficult when skin tests have failed to guide, elimination diets have not accorded satisfactory results, and a study of other possible causes has not brought to light the offending agent.

WHY URINE WAS SELECTED FOR THE STUDY

The probability of the patient carrying within himself the allergens that are causing his symptoms was suggested. The two most readily available fluids for study of this problem being the blood and urine, a series of experiments were undertaken in which either or both of these were used. It was found that whole blood, withdrawn from the cubital vein and injected at once deeply into the gluteal muscle, promptly relieved several patients suffering from eczema, especially the moist variety. One severe case of psoriasis of long standing was cleared up in three months. The patients' complaints of pain and soreness following the deep injections of blood, and the occasional difficulty in locating the vein, led us gradually into the use of urine. The problem of administration was not as simple as in hemotherapy; but one by one the difficulties were, to a large extent, overcome, and the injection of the patients' own urine became practicable.

The urine being always more or less septic, it was obvious that it must be rendered sterile, or as sterile as possible, before it could be safely used hypodermically or intramuscularly. Of course, it could be heated and rendered sterile, but would such a process destroy the allergens or change any of the delicate unknowns by which the urine, "the graveyard of the cellular system," must be loaded. It was thought to be necessary that, in order to be of value in desensitization, the allergens must not be destroyed or changed, which would probably be the case if heated. Different antiseptics were added to the urine, in turn. The urine, after thorough filtration, was allowed to stand forty-eight hours after the antiseptic was added, then cultures were made, and only sterile solutions were used. Graduated doses were given every three or four days, and not more than 9 cubic centimeters were injected at any one time. Each solution was kept under refrigeration—50 cubic centimeters being prepared at a time and used continuously until finished, when a fresh specimen was procured and 50 cubic centimeters more prepared. All injections were administered under strict aseptic routine.

COMMENT ON DISEASES TREATED

Several patients suffered from local reactions of moderate severity, a few had systemic disturbances; yet not one abscess or local infection, even of a minor character, was seen in more than two thousand injections.

The cases treated included arthritis, myalgia, neuritis, colitis, asthma, hay fever, urticaria, eczema, rhus poisoning, migraine, rhinitis, psoriasis, and pruritis. The best and most spectacular results were obtained in the eczemas. With rare exceptions they were either entirely relieved, or so much improved that the patients were satisfied. One eczema patient, a male of sixty years, had been also a sufferer from asthma all his life. He had tried many means of relief with but slight benefit, and came to the clinic with acute eczema. He has a long and interesting allergic history which I will not detail. The weeping areas had been covered with thick layers of absorbent cotton to absorb the serum. For weeks this had been going on. Following the second injection of urine, the lesions dried up so that no dressings were needed. In three weeks all areas were normal, except for some discoloration; and the asthma relieved but not cured. He is continuing the urotherapy in the hope that the asthma may thereby be further relieved. During the treatment, if the dosage were increased too rapidly, an outbreak of urticaria would occur; but by careful management he can now take six cubic centimeters without any "hives" appearing. This case appeared to suggest that the urine contained allergens, and as the desensitization progressed, he accepted larger doses without concurrent allergic symptoms developing. Other patients also exhibited allergic symptoms from overdosage of their own urine.

Twenty patients with arthritis were treated. One patient (three years standing) came in on crutches and after a month's treatment discarded them and is now very much improved. Another had polyarthritis for six years and was a complete invalid. She had sufficiently recovered in three months to discard her crutches, but having reached a standstill, her tonsils were removed; and now she walks quite well, and has resumed work in her home. Some were benefited, but we do not think desensitization will help many patients with polyarthritis, as in the majority of our cases we could see no results.

Several myalgias were entirely relieved. No patient with neuritis admitted being helped. One arthritic was relieved of a painful colitis, while being unsuccessfully treated for arthritis. Another

* A preliminary report from the Johnston Clinic, Anaheim.

arthritic received no benefit, but a migrain of years standing disappeared during the course of treatment.

Asthma in children seemed to respond better than that found in adults.

Hay fever, urticaria, and migraine responded to this treatment in several instances.

One patient with idiopathic epilepsy of fifteen years standing has been helped a good deal. Her skin tests were negative, and no allergic history was present. One parent had a very mild hay fever and the other rather severe migraine. The patient had neither. The patient has been under excellent treatment during these years, having gone through prolonged ketogenetic routine, dehydration, diet restriction, blood sugar regulation, and even surgery, with no change in number or character of attacks. The first four months of urine therapy has shown a drop from an average of three attacks monthly to three attacks in four months. Three other epileptics have shown no change so far in two months of treatment.

SUMMARY

We have termed this method of treatment "autodesensitization" for want of a better name. We believe the administration of the patients' own urine has decided therapeutic value, and should be widely used and studied. Among the problems yet to be worked out are (1) The limitations of dosage, and the best means of preparation and administration. (2) The value of autodesensitization in diagnosis of allergic states, that is, in determining the presence or absence of allergy in cases where skin and other tests have failed or produced only confused results. (3) The isolation of the allergens from the patients' urine by laboratory methods such as that of isolating proteose, so that definite dosage could be given at all times. This present method of desensitization is somewhat empiric, as the quantity of allergen in the urine may decrease rapidly during the treatment, thereby rendering the urine weaker therapeutically, as the case progresses toward recovery, and possibly making complete recovery impossible through lack of allergen. Two cases suggested such a possibility. Other problems could be cited.

We will endeavor to continue our investigations and shall be glad to make a further report should more data become available.

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DISCUSSION

Hyman Miller, M. D. (1136 West Sixth Street, Los Angeles).—It is quite obvious that the author, in developing his theory and practice of "Autodesensitization," has had two thoughts in mind. First, that skin tests "frequently do not point directly to a remedy" for allergic manifestations, and second, that the urine of allergic patients carries the specific antigen which produces such manifestations. These are both fallacies. Skin tests, when properly performed, properly interpreted and properly correlated with other findings, "point directly to the remedy," as the author puts it, in almost ninety per cent of all allergic cases.

As for a specific filtration process in the urinary excretory mechanism which filters out only those substances causing symptoms, this has been repeatedly disproved by many competent investigators such as J. Freeman, W. T. Vaughan, J. H. Black, H. L. Huber, Louis Tuft, etc. These men, in pursuit of the so-called urinary proteose of Barber and Oriel, have all shown that there is no specific antigenic substance in the urine of allergic patients. Antigenic substances may occur in the urine of any normal individual. As shown by Rackemann and Longcope, with horse serum, and Schloss, with egg-white, many years ago, any individual receiving these substances either by injection or ingestion may excrete them unchanged in the urine.

The author himself disproves his own theory of specificity by the fact that he obtained relief in several plainly nonallergic conditions where nonspecific protein therapy has frequently been helpful as, for example, in arthritis.

It seems to one who has worked in the field of allergy, both in the laboratory and in the clinic, that the author, despite an honesty of purpose, has been led astray by the will-o'-the-wisp of pseudo-scientific reasoning. A thorough knowledge of previous attempts along the same line, together with a knowledge of the fundamentals of allergy and immunology, would have permitted the creation of no such fallacious theories or questionable practices.

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Albert H. Rowe, M. D. (242 Moss Avenue, Oakland).—This record by Doctor Johnston is comparable to those of Oriel of Guy's Hospital, London, who has reported excellent results, especially in bronchial asthma, from the injection of a proteose, precipitated from the patient's urine. Attempts to reproduce his results by several allergists, such as Vaughan in this country, have failed; and Freeman of London in the *Lancet* of 1932 showed that all of Oriel's proteoses yielded fairly constant toxic reactions within a few minutes after their injection, and concluded that therapy with them had no scientific foundation.

Urotherapy has been used for some years in many diseases, and recently H. Jansion, R. Guardard, and Martinaud have reported its use in 372 allergic cases with remarkable results in 336 (in the *Presse Médicale* of 1933, page 1467). Such outstanding success cannot be duplicated today with other therapeutic measures used by the allergist. It may be that the cases have been followed for too short a period, and one wonders whether the diagnosis of allergy was accurate in every instance. It must also be appreciated that the effect recorded by these French physicians, and by Doctor Johnston, might be due to a nonspecific action, and that no real hyposensitization has occurred. These observations are of interest and need careful, investigative study, both for evaluation and better understanding of the fundamental mechanism involved.

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V. G. Alderson, M. D. (3115 Webster Street, Oakland).—In the *Lancet* of August 2, 1930, Oriel and Barber reported their work done with a proteose in the urine. This proteose they found to be excreted in relatively large amounts in some acute and chronic microbial infections, and to contain a definite substance, which in some diseases appears to have the specific antigen upon which the symptoms depend, so that it can be employed for specific desensitization.

American workers have used this substance at various times, prepared after the method of Oriel and Barber, but have reported indifferent success. This lack of success may be due to the complexity of the preparation of the proteose. Doctor Johnston may have the same proteose present in his preparation, and with a simplified technique may avoid damage to this proteose.

I look forward to future reports of this work by Doctor Johnston.

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Doctor Johnston (Closing).—It is needless that I should enter into any lengthy reply to the discussions and criticism of my paper. I am confident that the

injection of a patient's own urine (autourotherapy) has much therapeutic value, for I have seen results that justify this conclusion.

I will not attempt to solve the complex physiological problems involved, but hope that some research worker will yet be able to do so. In our investigation, we used whole urine instead of urinary proteose as prepared after the method of Oriel, since we believe that there was less probability of chemical change.

The French investigators mentioned by Doctor Rowe used freshly voided urine, which was injected subcutaneously immediately after the addition of an antiseptic. We considered that there would be less danger of sepsis if we were sure the urine was sterile before injection.

Whether or not the phenomenon produced by autourotherapy is caused by allergens or antigens in the urine, I am unable to determine; but I do know that many allergic states have been relieved and symptoms have disappeared by this line of treatment. Possibly the results are obtained by a defense reaction.

Doctor Miller is very positive that arthritis is never of allergic origin. He appears to be much more certain of this than W. T. Vaughan, whom he cites, and who states that "Arthritis has been found due to allergy." (Allergy, W. T. Vaughan, 1931, page 61.) Vaughan also states that "in most of these cases, allergy is not the usual cause." (Allergy and Applied Immunology, W. T. Vaughan, 1934, page 66.) Feinberg goes further and says: "There is evidence to show that allergy to bacteria, or their products, plays a common rôle in the causation of arthritis. The ordinary infectious arthritis, following a streptococcus sore throat, for example, is regarded by many as an allergic manifestation to the streptococcus. Some authorities today, such as Cecil, Swift, and Derick regard many of the manifestations of rheumatic fever as allergic." (Allergy and General Practice, S. M. Feinberg, 1934, page 277.) I might quote others.

So it is quite probable that Doctor Miller's statement, that "arthritis is a plainly nonallergic condition," should be greatly modified. Two of the volumes noted above are of very recent publication, and possibly the doctor has not had an opportunity to review them.

This work has been done and results noted purely from a clinical standpoint. Facts have been presented and clinical results reported. We are not trying to follow work as done by Oriel or anyone else; consequently we have no theory which we are trying either to prove or disprove. It is for others to take such clinical facts as we have presented, and brought out during the course of this work, and see if anything new and specific has been added to our meager knowledge of the subject under discussion.

STRABISMUS—AND SOME OTHER OCULAR TROUBLES OF CHILDREN*

By Roderic O'Connor, M. D.
San Francisco

Discussion *by Clifford Sweet, M. D., Oakland; George Newton Hosford, M. D., San Francisco; W. A. Wood, M. D., Oakland.*

THE objects of this paper are: first, to emphasize the importance of proper treatment of the various kinds of strabismus, *as soon as they are evident, no matter how early this may be;* second, to emphasize the need for a complete and accurate ocular examination of all children before they start to school; third, to mention, if time permits, the proper treatment of some other conditions, such as congenital cataract and occlusion of the nasal duct.

It occurred to me that a paper for this section, covering these points, might be worth while because I have had so many patients with the conditions mentioned whose parents have been advised (so they claim) by the family medico, and even by pediatricians, to delay treatment in the hope that time alone will effect a cure.

STRABISMUS

It must be understood that in all forms of strabismus the deviating eye is out of use, as far as direct vision is concerned. Hence, if the condition is not treated early and properly, one or more of four changes will occur:

1. The direct vision of the deviating eye becomes reduced and at times lost. This does not occur in cases of alternating squint.
2. Binocular vision is lost or never learned.
3. Bad muscle-nerve habits occur, as explained by Sherrington's Law of Reciprocal Innervation.
4. Changes in the orbital tissues, the result of the deviating eye being in approximately one position too long.

Inasmuch as these changes interfere with the securing of good results, it seems more intelligent to follow a plan that will prevent their development, in preference to one that allows them to occur, making it necessary to expend much effort later on in the hope of undoing them.

It is, therefore, very evident that all these patients should be under the observation of an ophthalmologist who is interested enough in this type of work to care for them properly from start to finish, including operative correction should that become necessary.

The best time to start treatment is when the squint is in the occasional stage, or at about the sixth month if the eyes have never been straight. In the former case the child is usually old enough to examine at once and to wear any needed correction. In the former the treatment is alternate occlusion, in order to keep each eye in use half time and so prevent all the changes mentioned except those relating to binocular vision. However, it is much easier to train binocular vision later on, if the vision is equal and normal ocular rotations have been preserved.

Retinoscopic refractions can be made quite accurately as early as the twelfth month, when any needed correction may be prescribed and worn. Babies seldom refuse to wear a *needed* correction.

If glasses fail to parallel the eyes, alternate occlusion must be continued with occasional checkups of the refraction till the child is nearly three years of age. If at this time the eyes are still out of parallel, operative correction is in order.

I have contended for many years that if good vision and motion have been preserved in each eye, binocular vision will be learned in the normal way, provided the eyes are straightened by an operation that does not interfere with the normal muscular action. I have many patients to prove this idea, so that, as far as I am concerned, it is not a theory.

* Read before the Pediatric Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

AUTHOR'S CINCH-SHORTENING OPERATION

Until my cinch-shortening operation was developed, none was available that was free from mechanical risks. Tenotomies are liable to a final overeffect, causing a divergence which is far harder to correct than the original condition. Any operation that calls for needle punctures of the sclera is, in my opinion, risky. I am able to tell my patients that the *operation is not on the eye itself, but on the tendon which is entirely outside the eye.* Hence, there is no risk of damage to the sight. In approximately two thousand operations during the last twenty-three years, there has not been one instance of such damage.

ADVANTAGES OF THE OPERATION

This method, which was devised by me in 1911 and first reported in 1912, has mechanical advantages so definite that there is no reason for undue delay in operating. These advantages are:

1. The tendon is not cut;
2. No tendon sutures are used;
3. The shortening is entirely in the tendon itself;
4. No slipping can occur because the shorteners are not removed until about the sixteenth day, by which time the tendon loops have had time to unite firmly;
5. Binocular occlusion not required;
6. Monocular occlusion not required in some cases;
7. No confinement to bed or house. Many patients lose practically no time;
8. No chance for adhesions to form between the tendon and sclera, because the eye is *not put at rest by binocular bandage.* Such adhesions, after other types of operating, often ruin the result, because the tendon action is from the limit of adhesion instead of the normal insertion.
9. A maximum, and unchanging, shortening equal to the length of tendon tissue which, of course, is too much.

The general risk of the operation is that of the anesthetic *only.* Tonsillectomy is a serious affair relatively.

INDICATIONS FOR THE OPERATION

Consequently, when non-operative measures have failed, further delay is harmful and operative correction should be started. This has been my practice for the last twenty-years, and I have as yet had no occasion for regret; certainly none that could be compared with the harm that results from a "do nothing" policy.

I adapted to the ocular tendon the scheme used in the cavalry service to shorten a saddle girth (cinch); hence the name "cinch shortening." Figure 1 shows the idea in a diagrammatic manner.

CAUSES OF STRABISMUS

It must be remembered that strabismus is a symptom, and may be due to a number of causes and conditions. Vertical deviations are frequently the original cause of lateral, and must be carefully looked for in the preoperative study of all cases. Whenever I find them I know that there will probably be trouble in securing a perfect result. Sometimes shortening a paretic superior rectus will, in itself, cause the disappearance of a horizontal squint. I demonstrated such a patient at the 1923 American Medical Association meeting in San Francisco. In another such, an operation corrected the vertical deviation and also a divergence of 25 degrees. These happenings suggest the idea that we must, if possible, find the true cause of the squint in each case and *not handle them all in the same way by rule-of-thumb methods.* In all cases possessing binocular vision, and in those in whom we hope to develop it, normal action of the opponents must be preserved in order to save convergence and parallelism in all directions of rotation. This can be done only by using non-mutilating operative methods.

A case of squint is not cured unless the eyes are parallel, which can be shown in young children by symmetrical pupillary reflections of a light. Mere improvement is worthless from the visual standpoint because the deviating eye is still out of use. It is another instance like "No matter how thin you slice it, it is still bologna."

MUSCLE EXERCISES

There has been a great furore lately over "muscle exercises." As such, the only good done is to the bank account of the one who directs them. The exercises incident to "fusion training" are entirely different, being really brain exercises intended to teach the eyes to work as a pair (binocular vision). These are so complicated that when most needed in young children, they cannot be used because of lack of interest, mentality, and the ability or desire to concentrate. *It is chiefly for this reason that I believe in straightening the eyes as early as possible, thus permitting binocular vision to develop in the normal way through experience, as in those whose eyes have never been disaligned.*

ROUTINE EXAMINATIONS BEFORE STARTING TO SCHOOL

I believe there is an old saying that a good start is half the battle. Many children never have this "good start," because of refractive errors or muscle troubles, or both. Frequently these conditions are not discovered until the child has been going to school for some years, and possibly gotten a reputation as dumb or backward, which may be due entirely to an inability to use the eyes in comfort. *It is not unusual to see cross-eyed children who are having the teeth straightened!!* I am always amazed at a line of action that favors such wonderful care of the teeth which, compared to the eyes, are relatively unimportant organs.

It must be emphasized that an acurate refraction cannot be made in children unless the muscle of accommodation is paralyzed by atropin. This, of course, means that a non-medical examiner should not be permitted to make these examinations.

In view of the fact that dental check-ups every six months are considered necessary, it does not

seem too much to ask for at least one thorough eye examination before a child starts to school. Any further ocular care will then depend on the results of this first test.

CERTAIN OTHER OCULAR TROUBLES

1. Congenital cataracts should be removed as soon as possible, provided they interfere seriously with vision. This is necessary because the retina of an eye that does not see cannot develop. If such an eye is operated later on, visual results may be disappointing. Open operation is not done—a simple discission being all that is needed. Local anesthetic, together with a few whiffs of ether, is all that is needed to permit the puncture which takes only an instant in the doing.

2. Congenital occlusion of the nasal duct usually occurs where it enters the nose under the inferior turbinate, and is simply an "imperforate membrane." The lack of drainage results in early infection of the lacrimal sac, the pus from which comes back into the eye. This is a source of danger, for in case any corneal abrasion should occur, serious ulceration with loss of sight, or even the eye, is possible. This condition, therefore, should be corrected as soon as possible, for, if permitted to continue, the sac inflammation may extend down the nasal duct and cause a complete occlusion. This is a difficult condition to handle in babies. Even if successful in getting a probe through the adhesions into the nose, they promptly readhere, and we are no better off. I have such an instance, as this is being written, in a nine-months-old child, whose medical adviser did not appreciate the need for prompt care and advised delay.

Compression over the lacrimal sac will sometimes rupture the membrane at the nasal end of the duct; but if several trials fail, there is no use in delaying the use of the probe. If treated this way early, there is seldom need for but the one probing.

IN CONCLUSION

Needless to say that you should refer all ocular troubles and anomalies to someone who is qualified to care for them—to observe and to do the right thing at the right time. *You* should not decide this by delaying reference till *you* think it should be done. It is not fair to the ophthalmologist, not to speak of the patient, to refer to him a pair of eyes more or less damaged through delay, and this seems to be the rule rather than the exception. Why the family medical adviser shoud fail to have such important ocular troubles cared for at once by a competent oculist is beyond my comprehension. This is my excuse for a possible over-emphasis.

450 Sutter Street.

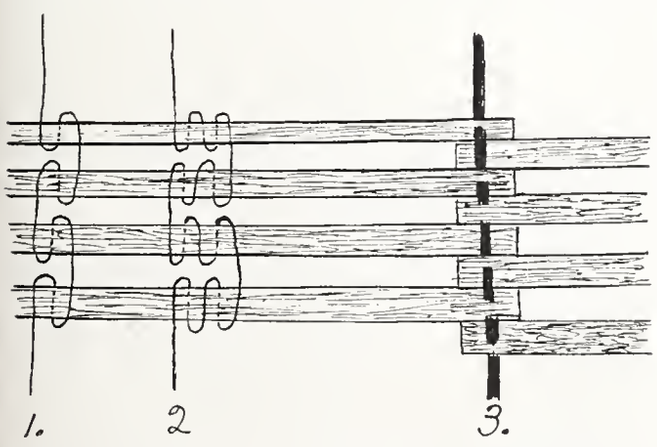

Fig. 1.—Showing: 1. Course of single over cinch loops. 2. Course of double over cinch loops. 3. Shortener, after straightening, which transfers the loops and makes the shortening.

DISCUSSION

Clifford Sweet, M. D. (242 Moss Avenue, Oakland).—I want to emphasize each point that Doctor O'Connor has made, especially those concerning strabismus and a thorough refraction for every child in the preschool period of his life.

I agree most heartily that every child whom the general physician suspects of having strabismus should be referred to an oculist for study. However, a mere reference is all too often not sufficient. The parents, fearful that surgical treatment will be advised by the oculist, may take the child to an optometrist (optician), thereby becoming victims of the "muscle training racket," with consequent wasting not only of money, but, more important, invaluable time with its toll of increasing loss of vision. If the optometrist is not selling courses in muscle training, he at least sells a pair of glasses, which are very probably a misfit (no child's eyes can be accurately refracted except under a mydriatic) and which, by allaying the parents' fears, again cause the loss of vision through delay. If the parents follow advice to the point of consulting an oculist, and surgical treatment is advised, the nature of the operation is often misunderstood; fear that the child may lose his eye is prominent in their minds, and the family physician must be prepared, by patient, thorough teaching, to explain the safety of the operation and the consequences if it is not done. Since I have understood the O'Connor operation, I have been more able than formerly to persuade the parents of my patients to have the operation done.

Symmetrical pupillary reflections of a light mentioned by Doctor O'Connor will often assist the physician to detect the presence of strabismus which he might overlook under ordinary observation, and quite as often enable him to demonstrate deviation of the eyes to doubting parents.

No child should enter school without having the benefit of a careful refraction under a mydriatic at the hands of a competent oculist. The rough test usually carried out with a standard reading chart is not sufficient. The child's power of accommodation is sufficiently powerful to overcome serious refractive errors temporarily. Of course, when one refers his patient to an oculist who merely glances at the child's eyes, or tests him only with a standard chart and says to the parents, "Oh, he's all right," no choice is left except to recommend another oculist who will use a mydriatic, a retinoscope, and his best efforts, as well as the full measure of the child's intelligence, to obtain the best possible refractive measurements.

Congenitally imperforate tear ducts should be treated, as Dr. O'Connor states, by probing, after the treatment of gentle pressure over the lacrymal sac has failed. Parents of a child with this condition become confused, at times, when the physician has tried conservative treatment to the limits of safety, and then refers the child to an oculist, who after changing the color of the drops for instillation into the eye, advises waiting to see if the condition will be "outgrown."

Doctor O'Connor's able effort to bring the eye problems of children forcibly to our attention is highly commendable. We, who limit our practice to certain fields of medicine, must learn to understand and bene-

fit by each other's knowledge and experience. Only by mutual understanding and helpfulness can we give our patients the service of which we are capable, to the end that the frequently expressed regrets for the passing of the family doctor will give place to appreciation for the results which only those of special training and long experience in more limited fields can obtain.

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George Newton Hosford, M. D. (490 Post Street, San Francisco).—Doctor O'Connor has been using his method so long and so successfully that it is only natural that he should be impatient with the reluctance of the parents of cross-eyed children to permit the surgical treatment of the condition, and of pediatricians and general practitioners to advise it. However, I can remember, all too vividly, the days when I used, in succession, the Reese resection, the method of suturing of which is safe enough but subject to a varying amount of slipping; the Worth advancement, with its hazardous and uncertain scleral sutures; Meyer Wiener's cumbersome goldplate modification of the resection; and several of the other seventy-one modifications which have been described in the literature. In those days I was quite willing to wait until the child was seven (or even seventeen) years of age before attacking his strabismus with surgery. If I did not operate, I at least knew that the parent and medical adviser would not blame me for making the patient worse. I also knew that all the parent was interested in was the child's appearance, and, unfortunately, this will always be the chief concern of the relatives.

After learning Doctor O'Connor's technique, and personally verifying every one of the advantages which he has enumerated to you today, I completely changed my point of view and I now share his enthusiasm for early operation.

If the visual acuity of the two eyes can be made approximately equal (not necessarily normal) early enough, there is a very excellent chance for binocular vision to develop spontaneously. If an orthopedic surgeon succeeds in straightening an infant's clubfoot, he does not have to teach him to walk. With a safe and positive technique at our disposal, we may and should operate early; and although we may have to use the improvement in appearance and the psychological benefits as the chief arguments in overcoming the apprehension of parents (which, after all, is well founded, because of the relatively poor results obtainable by the older methods). We can frequently confer the vastly more important blessing of binocular vision, with no additional expense or trouble and much to the gratification of all concerned. It is my belief that the O'Connor technique will be remembered and practiced long after all the other oculists of this generation are forgotten.

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W. A. Wood, M. D. (400 Twenty-ninth Street, Oakland).—The importance of the early diagnosis and treatment of strabismus is brought home to us forcibly when we find a child who has lost the vision in his deviating eye. There is certainly no room for argument here, nor again when we discover a child who has fallen out of line at school and been stigmatized as a delinquent or a mental deficient just for want of an eye examination.

I certainly agree that children should be tested before entering school. As to the operation itself, I can testify from personal experience to the great benefits and safety of the cinch-shortening method. One of the best arguments for it, too, as once expressed by Doctor O'Connor, is this: "You have nothing to lose."

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Doctor O'Connor (Closing).—I wish to thank the discussers for their remarks, which are more than kind, and also for reëmphasizing my contentions.

UROLOGY—THE PLACE OF PERSONAL VALUES THEREIN*

By Edward W. Beach, M. D.
Sacramento

Discussion *by Victor G. Vecki, M. D., San Francisco; Julian M. Wolfsohn, M. D., San Francisco.*

THE clinician must always reckon with personal values in both medicine and surgery; yet, oddly enough, nothing is more difficult of definition or determination. These personal values are of necessity all relative, and their enigmatical totality expressed by the personality, offers no peaceful picture, but a changing, moving, dynamic pantomime of reactions.

The urologist must familiarize himself with these reactions because satisfactory management of many patients waits upon a deeper analytic knowledge of their make-up. Perhaps no other specialist is consulted by more discordant individuals, *i. e.*, individuals known as neurotics, "borderline" dwellers, mattoids, maladjusted types, constitutional defectives, psychopathic personalities, etc. The basic reason for this lies in the fact that the discordant personality devotes more time and attention to sex than his concordant brother; so much so, that a reliable account of his sexual activities provides a sort of index to the degree of discordancy.

Notwithstanding these pertinent facts, the brilliant surgical chapter in urology exhibits no counterpart in understanding of the individual *per se;* and with this thought in mind an effort is made herein to work out a practical scheme for better comprehension of these individual values.

We consider personal values in a relative sense like space and time, because of our inability to define personality in the absolute. Both the axiolitic view (the Good, the Beautiful, the True, and possibly the Holy) as well as the non-axiolitic tenet, with its pragmatical or extra mental endowment, fall short, it seems to us, of the perfect personality mark. We accept the latter as a transcendental principle, exactly as the physicist accepts an eternal existence. The physicist defines space as a three-dimensional extension (infinitude of planes with lines erected) in a four-dimensional world (infinitude of three dimensional spaces) with time as the fourth dimension. These two are thus united by the speed of light. An existence removed from time, literally an eternal one, is then outside the restraining influence of light's speed, and hence a "something" without space. This "something," like personality in the absolute, is impossible of conception.

Structurally we conceive the personality as an admixture of static and dynamic qualities, each reciprocal and all united in a living, changing entity functioning as a unit. Personality is influenced by environment and tinctured by the era of existence. For better comprehension of personality, three phases appear mandatory: (1) Its psychobiologic factors; (2) its causal or construc-

* Read before the Urology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

tional analysis; (3) its final or teleological aspects. Most authors develop one phase and neglect others, so that the perplexed clinician attends a Pantagruelian trial, with the exception that he, unlike the contestants, is dissatisfied. He either quits in disgust or agrees with Sir Peter Teazle, "It's a damn bad world," at least the personality world. We feel that these divisions are all strings on the same fiddle, and all must be used to judge the instrument.

PSYCHO-BIOLOGIC FACTORS

Anyone dubious of the mutual relationship and interdependence of mind and body should read the "Life and Letters of Charles Darwin" for graphic evidence. Like hydrogen and oxygen in the water molecule, both mind and body are essential to the personality molecule. The exact charge each atom bears, *i. e.*, the exact somatic influence on the psychic horizon, and vice versa, is equivocal. A balanced personality presupposes resonance between body and mind, and it requires little imagination to conceive the incongruity of an Egyptian body type with Herculean impulses and psychic tempo.

Kretschmer has broadly grouped individuals according to body form into: (1) The long, lean asthenic or leptosome; (2) the tall sthenic or athletic; (3) the short and stocky or pyknic; (4) the special dysplastic types. The endocrine rôle in (4) is often prominent, but in the other groups not so clearly defined. With the psychiatrist's outlook he associates (1) and (2) intimately or remotely with the schizo personalities, and (3) with the cyclic personalities. He feels that schizo characteristics, residual in the healthy leptosome, when hypertrophied result in schizophrenia, and that all degrees between the healthy schizothymic and mental sickness exists. In the cyclo group there exists a range between the hypomanic and the depressive. The schizo group he judges from character standpoint, and the cyclic from the temperament standpoint.

In the schizo group something goes awry inside and the individual lives within himself. There exists an antithesis between the "I" and environment, often an insurmountable barrier, as a "pane of glass." There is a peculiar combination of cold affectivity and warm idealistic sensitivity. Since the road of environmental adjustment is difficult, solace is found in books or love of nature, and detours into the bypasses of fanaticism, idealism, and despotism are frequent. The cyclic group more easily adjusts to environment, and hence complexes are rare.

Of urological interest, the sexual life of the asthenic-autistic group is often placid and distinguished by a richness of eroticism with a paucity of the physical element. Auto-eroticism, especially narcistic inclusions, uncertainty of sexual object, with mother fixation complexes are logical developments. Sometimes suppressed carnal desires are endowed with a religious cloak, as exemplified by Dante's "Vita Nuova" to Beatrice. In the more athletic types, the physical element predominates. In the cyclopyknic group, the sexual life flows like a harmonious motif throughout the life theme; it rarely becomes short-circuited and gives the owner little concern other than activity.

CONSTRUCTIONAL CONSIDERATIONS

Through these treacherous waters we take Eugen Kahn as our pilot. We do not here treat of the intellect other than to state that a gifted intellect is often possessed by the discordant personality, as though nature had tried to make amends for her unkindness. Many geniuses in music, art, literature, science, and philosophy substantiate this contention.

To facilitate study of causality, we artificially cleave the personality into three strata from below upward: (1) impulses; (2) temperament; (3) character.

Impulses are founded on the physical. An impulse may be defined as a compelling urge to fulfillment of a biologic need. These are the basic impulses: the preservation of life with its various ramifications, as hunger, thirst, flight, etc., self-development and the procreative impulse. Consummation of an impulse brings pleasure, while denial brings displeasure, and hence their psychic rapport is apparent. All nascent impulses are considered amorphous, and hence in their evolution may be interchanged or annexed to any strata.

Temperament rests on both the physical and the impulses, but has a greater psychic derivation than the latter. Temperament collects and bundles the impulses, so to speak, and transforms these along with the bioplasmic expression in a step-up manner to the higher strata of character. Temperament, likewise, acts as a step-down transformer from character to the lower levels of the physical and the impulses. Its emotionality is judged by its excitability, its inner course and expression. Conduction, without temperament participation, from the lower to the higher strata, and vice versa, is constantly in progress.

Character, being energized by the two lower strata, now directs the personality through environment. "It is both the ship and pilot," as Kahn states. Each process in its finality again spreads downward to temperament, the impulses and the physical, since each process involves the personality as a unit.

In all individuals we can distinguish these three strata. They are exactly comparable to contrapuntal form, since all three instruments are used simultaneously to produce a euphonious combination (the concordant personality) without loss of individuality of any instrument. Now, in the discordant personality we still have the three instruments, and they retain individuality; but one instrument is flatted or sharped so that a nonmusical or disharmonious combination results. This emanates from one instrument, but must of necessity affect the tonality of the other two instruments. It follows that not everything in such a personality is discordant, but a quantitative dent on one strata necessitates a compensatory bulge on the others, or reciprocal involvement of all the strata. This deviation may be clinically most discernible on any of the three strata. Such a personality in proportion to the deviatory quo-

tient suffers internal friction, dissipates his energy and often, like Falstaff, melts in his own grease.

THE TELEOLOGICAL CONSIDERATIONS

We now consider the finality or purposefulness of the personality after the ideas of William Stern. In childhood we have only ego purposes (autotely) to be considered; but as the adult stage is reached, the horizon widens, and then follows the development of foreign or non-ego purposes (heterotely) *i. e.*, those concerned with family, society, state, Godhead, etc. The autotely, by a process of introception, is incorporated into the heterotely, so that a fine balance accrues (orthotely) which directs the individual toward the proper aim or goal. The physical, impulses, temperament and character comprise the autotely, but character becomes the determinative factor in heterotely by balancing the two and directing the personality toward the true goal.

Christ said, "When I was a child, I thought as a child, I understood as a child, I spake as a child; but when I became a man, I put away childish things," and the shift from autotely to heterotely is apparent with directional substitution of the proper goal for the false one of childhood. The advanced socialized teaching of Christ, with its total self-abnegation or altruism, represents the fastigium of non-ego purpose development. Conversely, Nietzsche apotheosizes the "I," or autotely, with his brutal Superman, and honorable mention goes to Zola (La Travail, for example) for his doctrine of work for material enjoyment or self-enhancement.

The concordant individual strikes a happy medium between the two, striving always for heterotely preponderance. The discordant personality, with asynartetic strata, fails of proper development, and hence has exaggerated or false ego values with which he struggles toward the false goal of personal prestige.

In the struggle with environment, a plethora of persistent ego values or developmental anachronisms proportionately increases the frictional coefficient, and the infantile adult often uses defensive mechanisms, subterfuges and transpositional excuses in direct ratio to his inadequacy. The latter condition likewise may temporarily accrue in the more harmonious personality through dissipation of energy in the battle with a hostile environment or formidable obstacles.

CONSTITUTIONAL INADEQUACY

Frequently these discordant personalities, because of their inherent asymmetry and rococco embellishments, are unable to cope with life's exigencies, and this inadequacy may be transposed and expressed in the somatic realm inclusion of the genito-urinary system. In this category is the hysterical personality, who remained a child except for knowledge of frustration displeasure, but posed as an adult, with the concomitant referred pains, frigidity, eroticism, uncertain sexual object, and pseudologistic tendencies. Again, many so-called "neurasthenics" belong here with their vague and bizarre pains, their "phobias" and their ever-present impotency.

These personalities may be compared to an airplane whose motor (physical endowment) is of fair construction, but rarely powerful, and whose air-foils and leading contours (psychic equipment) are so illy-designed that the lift coefficient, with full throttle, just overcomes the parasitic drag. Now comes inclement weather (environmental demands or vicissitudes of life) and the ship rolls, pitches, yaws, loses altitude and must descend (nervous breakdown). Her design may be so poor that no take-off is possible (psychosis), or if she begins to climb, she rotates about her own axis with rapid dissolution. Her motor may be thought responsible, but no amount of "tuning" will render such a ship efficient, even in fair weather. With such aerodynamic construction, she will "hunt" on the slightest pretext and can never vie with Pegasus under any circumstances. However, since each personality represents certain avigational possibilities, an individual performance curve should be attempted so that the demands, in a measure, may be tempered to the capacity.

SEXUAL PHENOMENA

The sexual impulse is one of the basic triad, if not the most elemental of all. In the concordant individual it is a silent yet potent activator blending without precipitation; but in the discordant personality it is a veritable "sore thumb," protruding in unexpected places and often bedecked in fantastic wrapping.

With certain reservations, the sexual impulse in personality is comparable to the grid charge in a triode vacuum tube, since a change in potentiality or polarity here is followed by correspondingly wider alteration in electrostatic performance, *i. e.*, in the ionic stream between filament and plate. Similarly, a change of potentiality or polarity in the sexual charge is amplified in the behavior of the personality, and this constitutes a rough index for the degree of discordancy. Most all discordant people, commensurate with the disharmony show sexual deviation, ranging in scale from slight aberration to actual sexual madness.

Prior to puberty sex consists mostly, if not entirely, of eroticism. Don Quixote's love for Dulcinea exemplifies the erotic tendency, an inclination to worship from afar, usually associated intimately with articles of the beloved and pedestal elevation or idealization. In the more advanced types, the article itself constitutes a fetish or symbol for the sum and total of the sexual expression. The writings of Bretonne add much to our knowledge of this subject. Postpuberal protraction of the erotic attribute in various degrees, spells inornate vanity, self-gratification, mother fixation and uncertainty of sexual object. The latter may be projected into bi-sexualism or hemosexual proclivities.

With the advent of puberty, or thereabouts, the erotic tendency is incorporated into and supplemented by the physical or libidinous development, so that sex then partakes of both phases. Our discordant hero may, therefore, enact the rôle of Tristan with Isolde in one part, and Samson with Delilah in another, in absence of a common

recipient. Certain hyperhedonistic types, which Dante relegated to the circle of high winds, are probably the result of sthenic impulses which notch the character and cause the individual to set all sail in a carnal direction. However, these sexual beings like Casanavia, Don Juan, Byron, Cleopatra, Messalina, etc., all apparently retain a kernel of sexual infantilism.

Homosexual proclivities may be either inherited or acquired, it seems. The active or passive rôle is determined somewhat by the biophysical constitution. Berman Bang, the Danish poet, sheds light on this subject; but much remains to be learned about these inverted types.

Sadism and masochism are intimately related, and exist in every cosmos to some extent. The former, named after Count de Sade, who possesses the doubtful distinction of being the only romancer to advocate vice, signifies cruelty in connection with the sexual act, either as an adjunct or substitute. It ranges from slight mental hostility to the unspeakable atrocities of Gilles de Rays. It is usually a masculine constituent, an evidence of will to power; but is also found in intersexual personalities of feminine persuasion. Catherine de Medici affords a notable example. Masochism, so called after Sacher Masoch, indicates desire for pain in connection with or in lieu of the sexual act, really the desire to yield raised to the superlative, and is, therefore, most often a feminine inclusion. In the male sex, Rousseau affords a classical illustration, with his pleasure in flagellation. Intersexual personalities often present a jumble of sadomasochistic tendencies corresponding somewhat to their androgynous physiques.

If the sex "ray" is passed through a Newtonian prism, the resultant spectrum includes all of these deviations; but our discordant hero represents an imperfect prism, hence this irrationality of dispersion phenomena. Study of these components in their dispersed forms provides a key to the "normal" sex equation, exactly as "forbidden" forms of oxygen and hydrogen in the nebular of Orion furnish a key to transformation of matter (bottled radiant energy) into radiation (unbottled energy or light).

CONCLUSIONS

We have utilized the three tangible keyboards (the psychobiological aspects, the causality, and the finality) of personality, both individually and collectively, in an effort to formulate a workable scheme for its comprehension. We are fully aware that our scheme has its limitations, but feel it serves a practical purpose.

According to our interpretation, despite the large number of variants in the personality nucleus, the impulses, temperament and character are constants (qualitatively identical), although they exist in different amounts (quantitative deviation) and are hence employed in a different manner for different purposes by each individual.

Constitutional inadequacy, either because of developmental anachronisms or extraordinary environmental demands, and which therefore is permanent or temporary, depending upon the etiologic factor, is often expressed in somatic terms. This expression or transposition may be productive of physical symptoms anywhere along the line and particularly in the genito-urinary domain.

Sex is one of the "motors" of personality. If the motor "misses" or performs badly its action is amplified in the behavior of the personality. The sex equation serves as a loose index to the degree of discordancy, and therefore the greater the discordancy, the wider the sex oscillation with its ramifications.

We have attempted this article in somewhat the same spirit, and for much the same reason; that Colonel Sellers placed a candle in the parlor stove, hoping thereby to shed some light and to serve some useful purpose in absence of better fuel. We feel that it is only by the keenest observation and the deepest thought on the part of many medical minds, that the truth concerning personality may be reached.†

Medico-Dental Building.

DISCUSSION

Victor G. Vecki, M. D. (450 Sutter Street, San Francisco).—We certainly are progressing. When, in 1914, I read before the annual meeting of the American Urological Association my paper, entitled "Psychotherapy in Urology," I was led by ideas similar to those expressed in Doctor Beach's admirable paper, which certainly requires and deserves careful study and consideration.

At that time I did not endeavor to penetrate into the stratosphere of "the place of personal values" of our patients, but I am quite sure that the results of our therapeutic endeavors would be considerably better in a number of cases if the differences of personality were always duly considered.

Julian M. Wolfsohn, M. D. (490 Post Street, San Francisco).—In this paper Doctor Beach has given us necessarily all too condensed a summary of his wide reading not only in classical and scientific literature, but of his experiences in clinical urology.

Without enlarging on the subject-matter in this extraordinary contribution, one may stress the point that what Doctor Beach has pointed out, so far as urology is concerned, obtains also in gynecology, and to a lesser extent in the other domains of medicine.

The individual must always be considered from the clinical standpoint as an integration of the psychobiological together with the somatic. When even one part of either of these spheres shows a deviation, the whole organism is affected proportionately.

To enlarge further upon this subject at this time would only reiterate what Doctor Beach has only too well emphasized.

The modern psychiatric approach in practice, which Doctor Beach has adopted, is that which Dr. Adolph Meyer promulgated years ago, and is now accepted by psychiatrists in general, namely, the psychobiological as influenced by heredity, environment, and organic function.

As the science of modern medicine becomes better understood, physicians specializing in different fields begin to find their functions overlapping with other fields only recently considered quite independent, and with this conception above enumerated we shall have a happy rapprochment between the urologist and the psychiatrist; both of whom should work together on the same problems, but each from a different vantage

† In preparation of this article the author has leaned somewhat heavily on E. Kahn, taking numerous basic ideas as well as the terms "concordant" and "discordant" from his valuable book, "Psychopathic Personalities."

point, attempting to reconstruct a machine which will give the most perfect performance possible.

This paper should be re-read and studied carefully, for the meat of its contents is in very concentrated form.

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Doctor Beach (Closing).—I am grateful to you, gentlemen, for the indulgence and leniency shown me in your discussion. Twelve years of priceless intimacies and close psychic rapport with the urological patient, drawn from every walk of life, has furnished me, as well as most of my urological brethren, a different perspective and a new horizon. The latter is responsible for my extraordinary interest in the subject of personality. Perhaps not all of these ideas are unequivocal, but they represent some thoughts gleaned in the search of a deeper and better comprehension, especially as to the "How?" "Why?" and "For what reason?" of it all.

NUMMULAR ECZEMA*

By Ernest Dwight Chipman, M. D.
San Francisco

Discussion *by William H. Goeckerman, M. D., Los Angeles; Kendal Frost, M. D., Los Angeles; Howard Morrow, M. D., San Francisco.*

THE ordinary eczematous patch is indistinct in outline. The insensible blending of the diseased with the healthy area is, in fact, a cardinal diagnostic point. There is, however, at least one form of eczema which presents a border so sharply defined that it has been given such designations as orbicular, discoid, circumscribed, herpetoid, nummular, and possibly still others. Of all these, none seems more appropriate than nummular for, meaning coin-shaped, the name indicates a circular configuration as well as a clearly defined margin.

American textbooks grant little space to nummular eczema, although it is given complete recognition by European writers. The importance which Brocq [1] attached to it is evidenced by his division of eczema into four types, viz., (1) true vesicular eczema (amorphous eczema of Devergie), (2) papulovesicular eczema, (3) nummular eczema, (4) erythematous eczema.

STRIKING CHARACTERS OF NUMMULAR ECZEMA

The striking characters of nummular eczema are the circular, or sometimes oval, form and the sharp outline. The lesions are circumscribed by a clearly defined circular border outside of which the appearance is perfectly normal, and inside of which the protean manifestations of ordinary eczema may be present. So sharp is the outline of these lesions that a ringworm infection is at once suggested.

While plaques may appear on any portion of the body, the favored sites are the arms and hands, more particularly the dorsal surface of the hands and fingers.

The size of the plaques is variable. They may be as small as a twenty-five-cent piece or as large as the palm of the hand. The average size is perhaps slightly larger than that of a silver dollar. They are often quite rebellious to treatment, and when they yield they are prone to recur, the recurrence choosing the same or a near-by site. A distinctive feature is that the plaques attain their full development at once, not spreading concentrically as in ringworm.

While commonly the lesion retains the same appearance throughout the entire extent of the nummular plaque, it happens at times that the center fades with a disappearance of all, or nearly all of the vesicles, while the borders become actively inflamed and vesicular. This variety more closely resembles ringworm than the ordinary type, and is designated by Brocq [2] as the tricophytoid form.

ETIOLOGIC CLASSIFICATION

Upon an etiologic basis French writers consider subvarieties such as (1) traumatic, (2) alimentary or toxic, (3) neuro-arthritic, and (4) reflex. The original description of arthritic eczema by Bazin corresponds exactly with our present-day picture of nummular eczema. It is interesting to note the emphasis which is placed upon the nervous system by the French, who refer constantly to arthritic or neuro-arthritic types of eczema. The recognition of the reflex variety adds another reason for the confusion which seems to exist in some quarters as to the relationship between nummular and what is called neurotic eczema. This subject will recur presently.

As to the mechanism whereby the lesions occur in sharply defined plaques, Brocq offered the suggestion that they choose areas of diminished resistance comparable to the fixed drug eruptions.

SECONDARY NUMMULAR FORMS

Thus far our discussion has been limited to original or primary forms; but by other means secondary nummular forms may be produced. These may cause confusion. First, is the transition of a primary amorphous patch into a sharply defined plaque by reason of invasion by bacteria or fungi. Next is the development of an eczematization upon a preëxisting, sharply defined dermatosis such as parapsoriasis, tricophytosis, even certain syphilids, tuberculids, and dermatophytids. This last item is of present-day importance, when so much confusion exists concerning the concept of dermatophytids. Also to be remembered is the ease with which a neurodermite becomes eczematized.

The situation, already complicated by the necessity of distinguishing between primary and secondary forms, is rendered more difficult by the description of like pictures under different names. Especially confusing at times is the designation of an eruption as neurotic eczema. A brief review of this topic will be worth while.

NEUROTIC ECZEMA

The idea of neurotic eczema first became prominent in this country following the publication of a paper by Bulkley [3] in 1898, in which he dealt with various forms or phases of nerve disturbances seen in connection with neurotic eczema. These were considered under the following heads:

* Read before the Dermatology and Syphilology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

(1) neurasthenia, (2) nervous and mental shock, (3) reflex phenomena of internal or peripheral origin, and (4) neuroses, either structural or functional. Commonly, the diagnosis of neurotic eczema was made on the basis of a phimosis or the advent of a new tooth. Eruptions which occurred on the arms or legs in a linear distribution, or in anything approximating the course of a nerve, were called neurotic.

In these cases there appears to be some basis for using the term "neurotic," as the supposition of definite nerve involvement seems tenable. In many instances, however, the term "neurotic" has been applied simply because the subject was obviously a nervous individual, quite as the older generation used the term "gouty eczema," to cover any eczema which occurred in an arthritic subject.

We shall be upon much safer ground if we limit the use of the term "neurotic" to those cases in which there is definite nerve pathology, and for the rest accept the doctrine that the neurogenous background may be a participating factor in any case of eczema, whether nummular or amorphous, and that possibly it may be the prime factor in some cases.

There are those who use the terms "nummular" and "neurotic" interchangeably. It is readily granted that nummular eczemas exist upon a neurotic basis, but not all neurotic eczemas take on the nummular configuration. It is quite possible that the distinction is not important, as long as we recognize the etiologic factors. And while it may not be possible to designate any particular reaction as neurotic because of its specific morphology, there is, nevertheless, a series of reactions, familiar to us all, which extends from the typical circular marginate nummular all the way down to the little amorphous patch in which the nervous system seems to give a clue to the dominant etiologic note. There are all degrees of sharp outline, some only suggesting a circle, some linear in distribution suggesting nerve involvement, as in zoster and accounting for the old term "herpetoid." Some, but not all, are rebellious to treatment, and some but not all, have a tendency to recur. Most commonly, the subjects are women of neurotic temperament, or those who have had emotional upsets or are depressed with worries. But if the lesions are not sharply defined circular plaques, they should not be called nummular; and unless there is evidence of definite nerve pathology, they should not be called neurotic.

CIRCUMSCRIBED ECZEMA OF THE VIENNA SCHOOL

What French writers called nummular was termed "circumscribed eczema" by the Vienna School. The latter considered eczema ani as included in this type, although today we sometimes attribute the sharp outline of this affection either to primary or secondary mycotic or bacterial invasion. Ehrmann emphasized the statement that circumscribed eczemas may be of internal origin. As an example, he cited chronic appendicitis as an etiologic factor. This is of interest today, as his observation antedated the doctrine of focal infection, though not the idea that circumscribed eczemas may occur as the result of reflex action from some disordered internal organ.

SUMMARY

We may summarize briefly the questions of etiology, diagnosis, and treatment.

Etiology.—Of course, if we knew the precise cause we would be speaking of dermatitis and not of eczema. We may seek, however, an appraisal of possible etiologic factors. Doing this it seems to me that, granting its most frequent sites are the exposed surfaces of the hands, and making due allowance for the effects of traumata, our primary search should be for some internal disorder. Whether it be the result of toxemia, of focal infection, or reflex action or of what not, the sudden appearance of a plaque in full development renders the concept of internal causation most plausible.

Diagnosis.—The diagnosis of the ordinary primary form is simple. The tricophytoid form so completely mimics ringworm that we will make microscopic examinations when the history tells us that we shall find nothing. The composite forms often call for diagnostic acumen. They require complete history-taking, careful analysis of the lesions and a determination of what the primary or essential elements may have been. Those secondary forms which were originally amorphous had better be referred to as having undergone nummularization. This makes for clarity in our own minds, and serves as well our efforts at description.

Treatment.—The subject of treatment requires little discussion. The lesions are rebellious to local treatment, although at times they yield to fractional doses of x-ray and the application of crude coal tar. They are very prone to recur, however, which suggests an undiscovered cause. What appears most logical is to regard the lesion as a cutaneous reaction, the outward expression of something wrong within. This calls for a complete survey of the patient from A to Z.

Borderline Cases.—One more question arises, viz., are we dealing with an eczema, or something which will one day be taken out of that mass of reactions from which already so many entities have been abstracted?

The only reasons for calling it eczema are that it oozes and itches, and that we do not know its cause. The same is true of dermatitis herpetiformis and granuloma fungoides. My own feeling is that the name has been handed down to us by a former generation in which 75 per cent of dermatoses were given the label of eczema, but that some time in the future we may find a new name on the basis of definite knowledge attained.

REPORT OF CASE

A case history is appended.

Mrs. S. complained of an eruption on the dorsal surface of the right hand of several weeks' duration. The general history revealed a nervous state, with chronic colitis. The eruption was recurrent and its appearance coincided with exacerbations of the intestinal condition.

Upon inspection, an annular lesion the size of a fifty-cent piece was found. The sharply defined margin was composed of fine vesicles. The center was clear. The patch was of the same size as at its inception, but the central portion had gradually become clear, leaving only the margin. Itching was moderate. Quite close by were two small erythematous patches, the size of a large split pea.

In spite of the history of recurrence, in spite of the evolution, the appearance of ringworm was so great and the satellite lesions so suggestive of dermatophytids, that scrapings were made. These were negative, however, for fungi. After two fractional doses of x-ray, plus local applications of crude coal tar, the lesions disappeared. I believe that this patient presented lesions of the tricophytoid type described by Brocq.

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DISCUSSION

WILLIAM H. GOECKERMAN, M. D. (1680 North Vine Street, Los Angeles).—So-called nummular eczema has interested me for many years because of its distinctive clinical behavior and appearance. It can easily be differentiated from the ordinary forms of eczema. When I first became familiar with this skin picture, it was spoken of as impetigo circinata. The late Doctor Harris of Chicago was especially interested in it, and frequently called attention to its distinctive characteristics. Somewhat later I had a tendency to place it under so-called infectious eczematoid dermatitis. As our knowledge of the probable mechanism of trichophytids increased, there was some tendency to explain its peculiar behavior and configuration on this etiologic basis, although I, personally, never could see much reason for this. However, in the light of still further studies on trichophytids, it seems to me worth while to study such cases further from the standpoint of trichophytosis. In a number of instances in my experience where the skin lesions were present in patients with early pernicious anemia and diabetes, it was only after the systemic condition was materially improved that the treatment of this form of eczema proved satisfactory. I should not like to draw any definite deductions from this observation except that I have learned to look carefully for some systemic disturbances, even if the patient seems quite well. I doubt if we can devise any fully satisfactory term for this skin picture other than a descriptive one, until we know more about its causation. There is no doubt in my mind that the eruption is distinctive in its clinical behavior and appearance.

KENDAL FROST, M. D. (1930 Wilshire Boulevard, Los Angeles).—This group of eczematous eruptions forms a relatively small percentage in the large group of eczemas, yet it is of considerable importance in this differential diagnosis of circumscribed eczematoid eruptions. The two major conditions to consider in this regard are (1) eczematoid ringworm or dermatophytosis, and (2) infectious eczematoid dermatitis. These two conditions may resemble nummular eczema very closely, yet the etiologic factors of each result in a radical difference in therapeutic principle. The fungus of the eczematoid ringworm reacts to ketolytic and antiparasitic agents which aggravate both the nummular and the eczematoid lesion. The latter being a low-grade pus infection, reacts therapeutically similarly to a pure eczema, as far as local treatment is concerned. Its major importance lies in discovering the source of infection, as against the more subtile metabolic etiology of the nummular eczemas.

HOWARD MORROW, M. D. (384 Post Street, San Francisco).—The question of the classification of the eczemas is one which has evoked controversy for many years. With increasing knowledge, a number of disease entities have been separated from the category of eczema. Nevertheless, this term continues to be used to classify a group of eruptions which, clinically, are not very closely related. The condition which the author designates as nummular eczema is recognized by most dermatologists under various names, including papulovesicular and neurotic eczema. The latter term is objectionable, in that it causes confusion with neurodermite (lichen simplex chronicus of Vidal, etc.). Furthermore, a neurogenic etiology is rarely demonstrable. For the present we must recognize the fact that there is such an entity as nummular or papulovesicular eczema, and hope that eventually an etiologic factor will be determined which will allow us to give it a more satisfactory term.

MUSCLE AND TENDON INJURIES—IN THE SHOULDER REGION*

By RALPH SOTO-HALL, M. D.
AND
KEENE O. HALDEMAN, M. D.
San Francisco

DISCUSSION *by Hugh T. Jones, M. D., Los Angeles; Edgar L. Gilcreest, M. D., San Francisco; J. Minton Meherin, M. D., San Francisco.*

DUE to the numerous complex structures involved, the diagnosis of injuries to the shoulder region has been inexact and often erroneous. A great interest has been awakened recently in the diagnosis and treatment of these muscle and tendon injuries. Recent workers have emphasized the fact that the actual pathology is often overlooked, and the diagnosis of sprain or arthritis is made with the result that proper treatment is not instituted early, and that disability is unduly prolonged or made permanent. Many of the cases in our series exemplify this point.

We have studied eighty-eight consecutive cases of muscle and tendon injury, of which number 40 per cent occurred in the region of the shoulder. The following represents the frequency of such injuries in our series: Supraspinatus tear, 13; biceps (long head) rupture, 6; biceps (short head) rupture, 2; biceps (slipping long head), 2; triceps rupture, 2; rhomboideus major, 6; latissimus dorsi, 2; trapezius, 1.

SUPRASPINATUS TEAR

A complete or incomplete tear of the supraspinatus tendon, where it forms the roof of the shoulder joint, was first described by Codman[1] in 1906. Since that time additional reports, together with papers by Brickner[2] and by Wilson,[3] have demonstrated that many cases of "painful shoulder" or "subdeltoid bursitis" are actually due to a rupture of the supraspinatus tendon. Ackerson and Codman[4] have observed a complete or partial tear of the supraspinatus tendon in 39 per cent of one hundred specimens of shoulders which were dissected. This finding, we believe, does not concur with observations made by other

*Read before the Industrial Medicine and Surgery Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

anatomists, nor with our own clinical experience. In order to separate those cases in which attritional and degenerative changes in the floor of the bursa are simulating injury to the supraspinatus muscle, we have devised a routine method of examination for the differentiation of these conditions.

The supraspinatus tendon becomes liable to rupture with advancing years, although some rather severe trauma, such as a fall on the shoulder, is usually the immediate cause of the tear. A typical case would have no symptoms prior to an adequate injury which would be followed by immediate pain in the region of the supraspinatus tendon. Sometimes it is possible actually to palpate a sulcus at the point of maximum tenderness. There is loss of the power of active abduction, although passive abduction is not restricted until some time has elapsed following the injury. The supraspinatus muscle serves to initiate abduction of the shoulder to a position in which the deltoid can function as an abductor. In this matter it must be remembered that patients often acquire the ability to initiate abduction by trick maneuvers; as, for instance, by tilting the trunk to the injured side, thus placing the humerus in an abducted position in regard to the scapula. Again, they may mask the loss of abductive power by strongly contracting the biceps, which fixes the head of the humerus against the glenoid cavity. To avoid these diagnostic pitfalls, during the examination of the shoulder all motion of the trunk must be controlled, and the elbow should be relaxed in extension. Control of the scapula alone is not sufficient. In dealing with this subject we have separated the diagnosis of acute and chronic cases, as they present quite different problems.

Acute Cases.—These patients usually present no asymmetry. Active initiation of abduction is lost, but passive abduction is present. This loss in certain cases we believe to be the result of pain from laceration or contusion of the subdeltoid bursa. Inhibition of supraspinatus function as a result of pain in the bursa, the capsule or the muscle insertion can be demonstrated readily by injecting 8 to 10 cubic centimeters of novocain into the bursa. In cases where the continuity of the tendon has not been affected, the patient will be able within a few minutes to carry out a full range of abduction. We have noted this response in several cases which clinically would conform to the picture of supraspinatus tear. Besides the injection of novocain, we have introduced air into the bursa, and followed this by radiograms; but as yet no diagnostic help has been obtained from this procedure. However, we have noted a more rapid improvement in cases of bursitis with calcareous deposits.

The technique of injection is simple, the needle being directed toward the upper border of the greater tuberosity until it strikes bone. It is then withdrawn one-eighth of an inch, an attempt is made to withdraw any fluid which is in the bursa, following which 8 to 10 cubic centimeters of 1 per cent novocain is injected.

Chronic Cases.—In the chronic cases, the problem is different because of the presence of periarticular adhesions. In these patients, both passive and active motion is limited. They give a history of immediate loss of active abduction after trauma. Severe pain is felt at once, while loss of passive motion gradually manifests itself. Here the pathology has been complicated by adhesions and inflammatory reaction in the floor of the bursa. Before a positive diagnosis is made, these cases are placed in recumbency, with double-skin traction on the arm for a period of five to six days. A pull of six to eight pounds is applied along the axis of the arm, with the shoulder abducted as much as possible. With the elbow bent at ninety degrees, traction is applied in the axis of the forearm so as to rotate the shoulder externally. By this method the loss of passive motion is regained in most cases, and in those where there is no actual tear of the supraspinatus, active motion returns.

Once a diagnosis of partial or complete tear of the supraspinatus has been made, the treatment will depend upon the completeness of this tear. It is generally agreed that partial tears should be treated with an abduction splint for a period of five to six weeks, after which physiotherapy should be instituted.

Where the tear of the supraspinatus tendon is complete, as evidenced by loss of power of abduction, treatment should be surgical, and should be instituted as early as possible.

Satisfactory surgical approaches have been described by Wilson and by Codman. It is well to make an exploratory incision two inches in length extending from the acromioclavicular joint downward, splitting the fibers of the deltoid muscle. When this is done, one obtains a fairly good view of the roof of the shoulder-joint and can determine the extent of any tear in the supraspinatus tendon. Small tears may be repaired through this incision, but for the larger tears it is advisable to extend the incision backwards from the acromioclavicular joint (the so-called sabercut incision). The acromion is cut across at its base and turned downward, together with the deltoid muscle which arises from it. Repair of the supraspinatus tendon can then be accomplished by attaching it to a groove made in the greater tuberosity of the humerus. This reinsertion is accomplished by sutures of fascia lata or braided silk. The acromion is reattached to the scapula by a beef-bone peg or by sutures which repair the acromioclavicular joint. Postoperative treatment consists of the use of an abduction splint for three or four weeks followed by physiotherapy.

RHOMBOIDEUS STRAIN

A rather common injury in our series was a strain of the rhomboideus major or minor muscles. These muscles take origin from the ligamentum nuchae and spinous processes of the seventh cervical to the fifth thoracic vertebrae. They are inserted along the vertebral border of the scapula, and their contraction draws this

structure backwards and upwards. This injury results from a sudden, incoördinated movement of the scapula, such as occurs when a wrench on which the patient is pulling slips, or when he attempts to save himself from a fall.

The diagnosis is made by the localization of tenderness and pain between the scapula and spine, and the production of pain by passive forward flexion of the shoulder, or by flexing the neck to the opposite side. A similar pain results from the active contraction of the injured muscles in extending the shoulder against resistance. Relief is given by immobilizing the scapula on the affected side with adhesive, so as to relax the torn muscle until healing occurs. The use of wide elastic webbing, wound tightly around the upper chest, has been of value in patients which do not tolerate adhesive strapping. Following this period of immobilization, heat in the form of baking or diathermy may be used.

One occasionally sees a strain of other muscles which arise from the spinous processes and insert on the scapula or humerus, notably the trapezius and latissimus dorsi. The clinical picture is similar to the above, and the treatment follows the same lines.

RUPTURE OF THE LONG HEAD OF THE BICEPS

In a consideration of ruptures of the long head of the biceps, credit must be given to Gilcreest[5] for his careful description of this condition. Observations by Meyer[6] in the dissecting room have shown the high incidence of intra-articular rupture of the biceps tendon, twenty such cases having been observed. No clinical data are available in the latter series.

The long head of the biceps probably becomes frayed, due to a roughening of the surface of the shoulder-joint and bicipital groove. With advancing years, the blood supply to the tendon is diminished, so that the sudden application of indirect trauma (a strong contraction of the biceps muscle against resistance) causes the rupture of the tendon. The rupture usually takes place at the insertion of the tendon into the superior margin of the glenoid, along the intra-articular portion, or it may occur at the junction of the tendon with the muscle belly. Rupture of the short head occurs, though rarely. A diagnosis of bicipital rupture is readily made by having the patient flex his elbow against resistance. This maneuver demonstrates an asymmetry of the biceps, the affected half contracting into a more spherical shape, and leaving an abnormal depression at its superior border. A marked weakness of the flexors of the elbow is noted, especially when the forearm is in the position of supination. Pain, when it occurs, is usually localized on the anterior aspect of the shoulder or in the bicipital groove. Old cases show some loss of the range of abduction because of peri-articular adhesions which cloud the clinical picture. In this, as in the previously described condition, an early exploration and repair of the torn structures is necessary if one is to avoid some permanent disability.

DISLOCATION OF THE BICEPS TENDON

A condition which is allied to the preceding, but of which little has been written, is the dislocation of the long head of the biceps from the bicipital groove. Meyer has noted this condition thirty-nine times in the dissecting room. In the recurrent dislocation when the arm is abducted and externally rotated, the tendon may jump out of the bicipital groove and come to lie in a more medial position. This may occur with a snap which can be heard, felt and seen, and often is quite painful. In those cases with permanent dislocation, the only symptoms are localized tenderness and weakness. In such patients, restoration of the tendon to the groove is not attended by the success which theoretical reasoning would suggest, because irregularity of the gliding mechanism leads to recurrence, rupture, or adhesions. It is better to insert the tendon into the diaphysis of the humerus or into the short head of the biceps.

SUMMARY

In the consideration of an injury of the shoulder one should determine whether the lesion involves the muscles or tendons, the bursae, the capsule of the joint, the joint cartilage or one of the bones in this region. The radiogram rules out the question of fracture, occasionally shows calcification of the bursa and may indicate arthritis. The differentiation of bursitis from tears of the supraspinatus tendon is simplified by the injection of novocain into the subdeltoid bursa. Adhesions may be overcome by continuous traction. A routine is outlined whereby the diagnosis is narrowed down to a point where therapy, either conservative or surgical, can be applied intelligently.

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DISCUSSION

Hugh T. Jones, M. D. (201 Medical Office Building, Los Angeles).—The authors of this paper deserve credit for their contribution to the accurate diagnosis of joint injuries. There is a tendency to lump all joint injuries into one class and call them sprains when the x-ray does not disclose fracture. Careful examination, coupled with accurate knowledge of the anatomy and physiology of particular joints, is a prerequisite to intelligent treatment.

I am particularly interested in what is said about the use of novocain injected into t e subdeltoid bursa to differentiate an actual tear of the supraspinatus tendon from a painful laceration or contusion of the region of the bursa without tear of this tendon.

Edgar L. Gilcreest, M. D. (384 Post Street, San Francisco).—Doctors Soto-Hall and Haldeman have presented a clarifying survey of the principal lesions of the muscles and tendons in the region of the shoulder. The following comments may be in order.

Supraspinatus.—Relative to tears of the supraspinatus, I consider, we are indebted to Codman for emphasizing their frequency; but my observations are in accord with those of the essayists, who have not found these lesions as often as Codman claimed. I am compelled, therefore, to believe that Codman has confused some cases of attrition of the capsule and tendon of the supraspinatus with those due to pure trauma.

The method recommended by Doctors Soto-Hall and Haldeman, for differentiation of cases of actual tears of the tendon of the supraspinatus from those of pain in the subdeltoid bursa, I believe to be very valuable. It appears to me as very rational and helpful. I have tried it in one case of chronic subdeltoid bursitis and, after the injection of novocain in accordance with their technique, the patient was able to secure voluntarily much more range of motion than previously.

Biceps Ruptures.—The essayists call attention to ruptures of the long head of the biceps due to a roughening of the surface of the shoulder joint and intertubercular sulcus; yet many ruptures occur where there is not the slightest evidence of arthritis, but where the lesion involved the soft tissues rather than the bone, and there is a destruction of the bursa, tendon and cartilage, showing conclusively that these capsular defects are extra-articular, rather than intra-articular. I recently have analyzed one hundred cases due to various causes.

Biceps Dislocations.—I have observed four cases and operated on one. This operation was done eight years ago, and a few months past the patient informed me that his arm was normal in every respect. I believe that this lesion occurs much more often than is generally considered. Whenever possible, I think that the tendon, whether ruptured or dislocated, should be securely fastened to the coracoid process as described by me in 1924.

I have found that the position of the arm, the surgical approach and, if necessary, the severance of some of the fibers of the deltoid and pectoral muscles, will aid much in rendering the operation easier and in making the high fixation more secure.

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J. Minton Meherin, M. D. (350 Post Street, San Francisco).—The authors are to be commended for again emphasizing the necessity of approaching the injured shoulder from the standpoint of its component parts. The diagnosis of arthritis or periarthritis should only be made when all other possibilities have been ruled out, or when these conditions complicate some other injury to the shoulder.

The diagnosis of sprain of the shoulder must be reserved for those mild injuries which more or less involve the entire shoulder girdle, and where no one muscle or muscle group can be isolated as the true cause of the symptoms. Accurate diagnoses will only be made following a careful mental dissection of the underlying anatomy and a thorough knowledge of its functions.

In the acute stage the less severe injuries to the supraspinatus tendon are frequently overlooked. Patients suffering from these injuries may be able to institute abduction, and their complaints may be referred to the belly of the muscle and to the root of the neck. The institution of abduction against resistance is practically always painful. Because of the apparent mildness of the early symptoms, treatment is not instituted and these patients then frequently have prolonged disabilities.

I have had the opportunity to observe some of the authors' cases which were injected with procain into the region of the supraspinatus tendon and the subacromial bursa, and I am convinced of its value in diagnosis. In those cases where fluid can be withdrawn from the bursa, or where calcifications are there present, immediate and at times surprisingly lasting relief is gained from this injection followed by the injection of five or six cubic centimeters of air. In some cases the introduction of even fifteen or twenty cubic centimeters of procain will be necessary. Often puzzling crepitations and clicks disappear with the ballooning-out of the bursa.

I have recently treated a patient suffering from a dislocation of the long head of the tendon of the biceps brachii. He presented the classical symptoms of excruciating pain, accompanied by a definite snapping noise when external rotation with the arm abducted was carried out. Attempts at supination against resistance were also exquisitely painful.

At operation a definite dislocation of the tendon of the long head of the biceps brachii from the bicipital groove was demonstrated. The snapping noise occurred when the lesser tuberosity slipped beneath the tensed tendon. At the time of operation it seemed feasible to replace the tendon in the groove. This was done, and before the wound was closed no maneuver, either active or passive, could dislodge the tendon.

The patient was greatly improved for four and a half months, at the end of which time the former symptoms recurred. Following six weeks of observation the patient was once more operated upon. The tendon had again dislocated, and showed marked atritional changes for a distance of about three-quarters of an inch proximal and distal to the tuberosities. At this operation it was removed from its origin at the glenoid rim and placed in a tunnel, which was made in the bicipital groove.

One cannot be dogmatic as to the choice of operation in these slipping tendons, but in view of the above experience, I would not be inclined in any subsequent case to attempt to replace the tendon in its groove.

BOTULISM—DUE TO FRESHLY FERMENTED FOOD*

FIVE FATAL CASES IN A JAPANESE FAMILY

By Frank R. Anderson, M. D.
San Jose

Discussion *by Karl F. Meyer, Ph.D., San Francisco.*

THE improvement in preservation methods by commercial canners has confined the cases of botulism in the past few years to home-prepared foods. Advices disseminated by newspapers, magazines, the radio and other agencies, have reduced the number of outbreaks due to home-canned foods. At present, cases of botulism can be looked for from freshly prepared foods. A brief résumé of the clinical manifestations and treatment of five cases from this type of food follows:

On December 27, 1933, a motherless Japanese family of eight ate a meal which, among other native delicacies, included a food called natto. Most Japanese families buy this food directly from Japan in tubs, preserved with 8 per cent salt. Older Japanese families ferment their own natto on special occasions. This family was preparing the food for the first time since the mother's death.

Natto is made by boiling dry soy beans until they reach the consistency of mush. The food (in a cloth sack) is then placed in a hole in the ground, which has been previously heated by a bonfire. It is covered with the warm earth and

*Read at a meeting of the Northern California Pathological Association, July 2, 1934.

allowed to remain for forty-eight hours. The resultant fermentation imparts a peculiar flavor to the mixture.

The oldest daughter, who helped her father make the food, noticed the mixture did not taste like the kind her mother used to make, and therefore only tasted it. She did not, consequently, develop the disease. A son-in-law and a twelve-year-old son ate none.

REPORT OF CASES

Case 1.—Teruko Aritomi, a girl, age six. Was taken to the hospital December 30, 1933, at 5 a. m., twenty-four hours after the onset of symptoms, which came on twelve hours after eating the suspected meal. The initial symptoms were pain in the abdomen and vomiting. Examination showed ptosis of eyelids, loss of pharyngeal reflexes, paralysis of neck muscles and inability to swallow. Heavy mucus had accumulated in bronchial tubes and throat. Temperature was 98.6, pulse rapid and weak. White blood corpuscles, 8,900; neutrophils, 85 per cent; small lymphocytes, 14 per cent; transitionals, 1 per cent. The urine showed traces of albumen and acetone.

Two enemas were given, with good results, and 500 cubic centimeters of Hartman's solution was administered subcutaneously, as well as three and one-half grains of caffein sodio benzoate. Catheterization was necessary.

Four hours after admission, the patient developed a sudden respiratory paralysis, which was not benefited by alpha lobelin, caffein, or adrenalin.

* * *

Case 2.—Harumi Aritomi, a boy, age fifteen. Removed to the hospital on December 30, 1933, at 1 p. m., thirty-six hours after eating the meal. He showed a transient ptosis of the eyelids, absent pharyngeal reflexes and dysphagia. The neck muscles were weak. The temperature was 97.6 and pulse 70. Catharsis was given. An intravenous injection of one-half cubic centimeter of typhoid vaccine produced only a raise to 98 degrees in temperature. Thirty-seven hours after admission, during which time complete ptosis of the eyelids, inability to swallow or raise the head developed, this patient's pulse became rapid and thready, and respiratory paralysis ensued. Strychnin, grain one-sixtieth, and caffein sodio benzoate, grains seven and one-half, did not delay the end.

* * *

Case 3.—Yoshiko Aritomi, a girl, age fourteen. First noticed a headache thirty-six hours after eating with the others. Blurring of vision and extreme weakness followed. At the hospital she showed ptosis of the eyelids, dysphagia and absent gag reflex. In addition, she was unable to void and showed more neck and shoulder weakness than the others. Cathartics and enemas were given and catheterization was necessary. She was extremely restless, which necessitated opiates. Seventy-two hours after admission, respirations became slow and irregular and cyanosis was evident. Caffein, seven and one-half grains, and strychnin, grain one-sixtieth, improved this, but the pulse rose to a rate of 160 and ten hours afterward respirations ceased.

* * *

Case 4.—Motaro Aritomi, a man, age 56. Taken to the hospital with Cases 2 and 3 thirty-six hours after eating the suspected meal. He complained of a headache, weakness and blurred vision, but could see normally with the ptotic lids raised by hand. His throat showed the typical "local anesthetic" findings, but no muscular weakness of neck could be demonstrated. Routine catharsis and sedative were instituted. Temperature was 98 and pulse 70. Two days later he lost ability to swallow, when 1000 cubic centimeters of glucose solution was given every twenty-four hours. An intravenous injection of 10 cubic centimeters of 1 per cent congo-red solution was made. On the fourth day the pulse became rapid and irregular, and he was unable to hold up his head. Death was very sudden from respiratory paralysis.

* * *

Case 5.—Kikuro Aritomi, a boy, age three. First showed symptoms on the fourth day after eating the meal. He was suddenly stricken with ptosis of lids, inability to swallow and inability to hold up his head. Pulse was 120 and rectal temperature 99.3. During the first twenty-four hours he was given 10 cubic centimeters of 1 per cent congo-red solution intravenously and 11,000 units of specific antitoxin A and B by the same route. After this he was given 4,000 units every eight hours, intramuscularly. Fluids were maintained by giving glucose and Hartman's solution intravenously. The pulse gradually became more and more rapid, until fifty-two hours after the onset the breathing ceased.

COMMENT

Cases 1, 2, and 3 were examined by autopsy. The intense congestion of lungs, spleen and kidneys noted by others were present in these cases. Cultures from spleen were negative. Stool cultures were positive in Cases 4 and 5. Blood and urine cultures were negative.

The following general symptoms predominated:

1. Ptosis of eyelids was present in all cases.
2. Loss of pharyngeal reflexes. (Local tonsil anesthetized throat.)
3. Dysphagia, followed by absolute inability to swallow.
4. Paralysis of neck muscles.
5. Low temperature.
6. Death by respiratory paralysis.

Early administration of antitoxin to all who have eaten suspected food is very desirable. Antitoxin was not available for these patients for four days after the outbreak and after five cases had developed. The case treated with antitoxin did not show benefit from its use.

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DISCUSSION

Karl F. Meyer, Ph.D. (Hooper Foundation for Medical Research, San Francisco).—The report of Dr. Frank R. Anderson is a timely contribution to the epidemiology of botulism. Cases of intoxications due to articles of food not preserved in sealed containers are relatively rare in the United States. In the 233 outbreaks or single cases of botulism which occurred in the United States between 1899 and 1934 (June), approximately twenty were connected with cured and smoked products. By contrast, in Europe the majority of botulism cases are associated with meats, sausages, and hams which are improperly handled. The observations made by Doctor Anderson call attention forcibly to a possibility which in the light of previous studies had been anticipated—a plant product undergoing abnormal fermentation in a region heavily infected with spores of Closteridium botulinum is apt to contain the toxin of this organism. At the time the epidemiologic investigations were instituted it was impossible to reconstruct the circumstances which led to the formation of the poison within the relatively short time of forty-eight hours. Two samples, one stored in a peanut jar and a portion of the abnormally fermented soy-bean mash, contained a very potent Closteridium parabotulinum Type A toxin. Since the specimen had been held in the household for at least six days, it is quite likely that the anaerobes continued to grow and the toxin tests made obviously failed to reflect the actual toxicity of the "natto" at the time it was eaten. Being of a pasty consistency it is not unlikely that the toxin production was uneven. The prolonged incubation time in Case 5 may perhaps be due to the ingestion of a part of the fermented food which was relatively poor in toxin.

COMPULSORY HEALTH INSURANCE*

VIII

By Frederick L. Hoffman, LL.D.
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SCARCELY does a health insurance act come into operation when efforts are made to enlarge its plan and scope in every direction. Starting usually with the lowest paid wage-workers living close to the margin of a bare existence, there is a demand that the limits be raised to higher paid workers, gradually reaching the white collar class of moderately paid clerical employees and minor supervising officials. In England the original income basis was £160 per annum, which was later raised to £250, where it remains at the present time. Next comes the age of commencement. Starting with, say, eighteen years, it has now been reduced to sixteen years, while there are demands to lower it to fourteen, or the school-leaving age.

EXTENSION OF HEALTH INSURANCE TO OTHER GROUPS

In May, 1934, the *Lancet* reported on a resolution of the Birmingham Insurance Committee favoring the extension of health insurance to cover children from the time they left school. In the *Lancet* of June 30, 1934, it is said that,

"The proposal has since been brought before the annual conference of the National Association of Trade Union Approved Societies, and this body has decided in its favor. The conference added a rider, however, that the whole of the contributions for children of fourteen to sixteen should be paid by the employer and the State—a suggestion which would place the beneficiaries in a privileged position. In the discussion it was stated that the Government had no intention of raising the school-leaving age, and that if unemployment insurance were to apply between the ages of fourteen and sixteen, it was only fair that health insurance should also be available for the same period. Of the thousands under the age of sixteen who were engaged in distributive occupations, many, it was urged, were in need of medical attention but could not afford it. To this the reply might be made that growth and multiplication of public medical service schemes makes it untrue to say any longer that juvenile workers cannot afford medical attendance. As yet, however, there seems to have been no official expression of medical opinion on the subject."

Originally domestics and agricultural workers were excluded from the Act, but it did not take long, by means of amendments, to bring these workers within the plan and scope of the Act. Every addition to health insurance, of course, reduces the field of private medical activities, and in no direction has this been more threatening than in the efforts to bring in dependent members of the workers' families.

According to the *Lancet* of April 21, 1934:

"From the records of sickness of sixteen million insured persons we had learned that about half the working population suffer from sickness in some form during the year; that 20 per cent of those who claim sickness benefit do so on account of bronchitis, pneumonia, or other respiratory disease, 13 per cent on account of indigestion or diseases of alimentary tract, 10 per cent on account of rheumatic troubles, and a like number of injuries, accidents, and septic wounds. These four conditions accounted for more than half of the noninfectious sickness of the English people; plus the infective diseases, they constituted the common enemy of the nation, more wasteful in time, money, and life than all the industrial strikes put together."

THE MINOR AILMENTS DOMINATE IN HEALTH INSURANCE

Little is said about the treatment of chronic diseases which, in many directions, show an increase during recent years. The consensus of opinion of those who impartially review the situation is that vast sums expended for medical benefits under national health insurance are largely wasted on the treatment of minor ailments which, ordinarily, would pass without notice, but which now constitute an easy way to secure cash benefits during periods of idleness.

Little is heard of the difficulties involved in the change of doctors in cases where the panel physician is unsatisfactory to the insured. The *Lancet* of June 30, 1934, contains some very interesting observations on this subject, which I quote as follows:

"The regulations on change of doctor are still inconsistent with the wishes of the profession, which has always held that a disgruntled doctor and a dissatisfied patient are best parted as soon as may be. At present an immediate change can be effected only when both practitioners give their consent or when the patient moves outside the two-mile radius of his medical attendant's practice. When a patient wishes to change doctors, without consent and without moving, he has to give at least a month's notice before the beginning of each quarter. He writes to the insurance committee enclosing his medical card, and the committee returns the card with a slip (printed in red ink and gummed to the inside) authorizing the change. He takes this card, with the slip in it, to the new doctor of choice, who signs it in accepting the patient for his list, and it has then to be returned to the insurance committee by the new doctor within seven days. After registering the transfer the committee sends the insured person a new card with the new doctor's name on it. The former doctor is responsible for medical treatment up to the time of effective change, *i. e.*, the beginning of the quarter. But as the patient is dissatisfied with him—otherwise he would not have made the change—it is unlikely that he will go to him for advice, and the probability is that he will have to pay for medical attention obtained elsewhere."

ADMINISTRATION COSTS IN AMERICA WOULD BE HIGHER THAN IN ENGLAND

If the American public clearly realizes these difficulties, it will think twice before giving its approval to an American system of national health insurance which unquestionably would be more costly and more difficult of administration than the English. As stated in the *Lancet* article referred to above, "It will be seen that one local transfer involves four postages, two of which are paid for by the insurance committee, and this gives much clerical work to the committee." The facts of the situation are difficult to apprehend without personal inquiry and contact with the parties concerned; but it goes without saying that the system controls the situation with little regard

* One of a series of articles on compulsory sickness insurance written for California and Western Medicine by the well-known consulting statistician, Frederick L. Hoffman, LL. D. Articles in this series were printed in previous issues as follows: I, in April, page 245; II, in May, page 361; III, in June, page 411; IV, in July, page 33; V in August, page 114; VI, in September, page 177; VII, in October, page 262.

for the welfare of the patients. I may say in this connection that there are more than 16,000,000 insured persons in England and Wales, and some 16,780 practitioners engaged in health insurance work, and that it is only natural that now and then there should arise difficulties in the administration. It is only by a study of the actual experience from day to day that a true insight can be gained of national health insurance. The situation cannot possibly be made clear by official reports presenting only the government side of the question.

ENLARGEMENT OF HEALTH INSURANCE SCOPE BY APPROVED SOCIETIES

Under the British system of national health insurance, medical benefits may be enlarged in various directions, provided the finances of the Approved Societies permit it. In other words, every Approved Society is independent of other societies, and its own financial condition determines the extent to which medical benefits may be enlarged. These for the time being chiefly consist of the following:

"Payment of the whole or any part of the cost of medical or surgical advice or treatment which is not within the scope of any other additional benefit or of medical benefit.

"Payment of the whole or any part of the cost of dental treatment.

"Payments to hospitals in respect of the maintenance and treatment of members, as well as expenses incurred by members traveling to and from hospitals.

"Payment of the whole or part of the cost of maintenance and treatment in convalescent homes, as well as traveling expenses incurred by members traveling to and from convalescent homes.

"Provision of premises suitable for convalescent homes and their maintenance.

"Payment of the whole or part of the cost of medical and surgical appliances other than dental and optical appliances and those provided as part of medical benefit.

"Payment of the whole or part of the cost of ophthalmic treatment (other than as provided as part of medical benefit) and the whole or part of the cost of optical appliances.

"Payment of the whole or part of the cost of providing nurses."

EXTENSIONS OF HEALTH INSURANCE INTO DENTAL AND OPHTHALMIC FIELDS

Of those eight additional medical benefits the two most important are the dental and ophthalmic. As observed by Foster and Taylor in a treatise on National Health Insurance, London, 1934, with reference to dental treatment:

"This is probably the most important of all the additional benefits, and has been widely adopted in the various schemes which have been set up by the societies.

"Its administration has called for a great amount of detailed consideration, and a separate set of dental benefit regulations relating thereto have been promulgated.

"Dental treatment is defined as such treatment as includes scaling, treatment of the gums, fillings, extractions, provision of artificial dentures and their repair, and remodeling, crowning, and examination and advice, and the administration of anesthetics in connection with any such treatment. For the purpose of making arrangements for a satisfactory service of dental treatment, and for supervising it, a statutory body known as the Dental Benefit Council has been set up."

Without enlarging, for the time being, upon the details of this provision, I will proceed to briefly consider the ophthalmic benefit, as to which it is said:

"The regulations provide that, in certain circumstances, a society may require that a member who is applying for the benefit shall submit himself to an ophthalmic examination. In such circumstances, or if the member has obtained the society's authority for an examination, the society is obliged to pay the whole cost of it. This provision does not apply to any examination of a member made by an insurance practitioner to which the member is entitled as part of medical benefit. It is obligatory on the society to adopt a comprehensive scale of charges for the supply of optical appliances of a standard quality, and it is laid down by the regulations that they shall pay the cost of such appliances at least to the extent of 15s. This figure may be reduced to a maximum of 10s. if the society have already met the cost of an ophthalmic examination. Members are entitled to obtain optical appliances from any optician who is a member of an organization for the time being recognized by the society, or from any other optician, provided the consent of the society has previously been obtained. If the applicant prefers to consult such other optician, he is entitled to claim from his society only such sum as they would have paid had he obtained the appliance through the organization."

HEALTH INSURANCE PLANS LEAD ULTIMATELY TO INCLUSION OF MAJOR PORTION OF POPULATION AND MAJOR PORTIONS OF MEDICAL SERVICES

These two benefits clearly indicate the direction in which the plan and scope of health insurance is gradually enlarged, curtailing to a considerable extent the field of private enterprise in general and specialized practice. I conclude these observations with a quotation regarding the provision for the employment of nurses, which reads as follows:

"No payment may be made in respect of the provision of a nurse unless the nurse is registered under the Nurses Registration Act, 1919, or the corresponding Act relating to Scotland or Northern Ireland, or is a person who habitually undertakes nursing services for fee or reward.

"Societies may make arrangements with nursing associations for the provision of nurses to members, but application may not be refused on the grounds that a member desires the services of some other nurse. In such circumstances the society can be required to pay only such sum as it would have done had the benefit been obtained through the association.

"Except where an arrangement has been made with an association, the society must pay the whole cost of the nursing services where the cost does not exceed £1. Where the cost exceeds £1, the excess or part of it may be paid as is reasonable, having regard to available funds."

In brief, the evolution of national health insurance is distinctly in the direction of a system of state medicine comprehending the major portion of the population and the major portion of medical services. But the fact remains that the vast sums required for the purpose are largely squandered in the treatment of minor ailments and unimportant affections; or, in the words of Doctor Breitfeld of Germany, in a brief treatise on the labyrinth of social relief: "The cancer of sickness insurance today is not so much the treatment of chronic diseases for long periods of time, or the exceptional costly instances of illness, but the endless, numerous, needless, artificial and imaginary

illnesses or affections. These are the ruin of social insurance, but to battle against them is practically hopeless."

I regret that, for want of space, I cannot on this occasion enlarge upon this interesting aspect of the problem. The significance of adding further benefits to the list of required benefits is perhaps best illustrated by the cost of dental benefits which, in 1930, amounted to approximately £2,000,000. In that year approximately ten and one-half million insured persons in England and Wales were eligible for dental benefit, but only one in ten actually received it. With regard to the cost of ophthalmic benefits it is said:

"In 1930 the Approved Societies spent £353,000 on this benefit, which is not limited to the provision of spectacles and examination of eyes. Societies must be prepared to consider applications for payment toward the cost of any ophthalmic treatment (including operations on the eye). A member has the right to obtain treatment from any medical practitioner of his choice, whether or not the practitioner is working under arrangements adopted by the society. Fifteen shillings is the normal payment by a society for a member's optical appliances, and in a case where the cost exceeds 15s., such part of the excess may also be paid as the society determines. Where the society is also meeting the cost of an examination, the figure of 15s. is reduced to 10s."

THE LURE OF MEDICAL HISTORY*

SEVEN WONDERS OF MEDICAL SCIENCE—MODERN MIRACLES†

By A. C. Ivy, Ph.D., M.D.
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JUST as nature forces animals and plants to adapt themselves to their environment in order to survive, nature impels man to invent and discover the ways and means for exercising a greater control over his environment in order that his life may be easier and more complete.

The ant and the bee labor and save and have a highly organized society, but they do not progress appreciably. It is man's ability to improve his workmanship, his ability to discover and invent, that makes it possible for him to progress. In order to invent and discover, man must use either the uncertain empirical method which is based chiefly on guessing and faith, or the more certain scientific or experimental method which is based on the discovery of the laws of nature, their analysis and practical application.

It is through the use of the scientific method of controlled experimentation, which yields a knowledge of the fundamental principles of nature, that man during the past two centuries has achieved such a remarkable understanding and relative control over his environment. It is through animal experimentation to a large extent that man has achieved his present success in the battle against disease—a battle which, of course, is still under way. Only through a perusal of history may one gain an appreciation of *the horrors of disease* from which present-day civilization has been more or less freed through the application of the discoveries of medical science.

SEVEN WONDERS OF MEDICAL SCIENCE

Seven wonders of medical science may be described briefly as follows:

1. *Anesthesia and analgesia,* which give us relief from pain and have liberated us from the pain of operations without anesthetics.

2. *The germ causation of infectious diseases,* which has made possible the obliteration of the horrors due to cholera, plague, yellow fever, childbirth fever, typhoid, etc., from intelligent and well-governed communities.

3. Our present knowledge of *immunity and body resistance to disease,* which would eradicate smallpox and diphtheria from the face of the earth if put into universal practice. This also includes our knowledge of specific "antisera" against lockjaw, diphtheria, scarlet fever, rabies, specific meningitis, etc.

4. *Antisepsis and asepsis,* a knowledge of which makes possible the prevention of wound infection and blood poisoning, and operations on all diseased organs.

5. *Knowledge of symptoms, which is based on a knowledge of physiology.* Symptoms result when the physiology of an organ is disturbed, and only when the functions of organs are known can disease of an organ be accurately determined. The use of x-rays helps tremendously.

6. *Organotherapy, which is based on a knowledge of physiology.* For examples, we may cite the use of *insulin* in diabetes, *thyroid extract* in certain children showing undergrowth and poor mental development, *liver extract* in *pernicious anemia,* etc.

7. *Animal nutrition and vitamins,* as related to growth and the prevention of such diseases as rickets, scurvy, polyneuritis, pellagra, etc.

Our knowledge of nutrition and the vitamins has also rendered it possible to increase our food supply, to prevent certain chronic diseases and malnutrition in children, and in times of war and economic depression to balance diets so that "war edema" and other evidences of malnutrition may be prevented.

We should add to this list the growing appreciation among the medical profession and laity of the necessity and importance of periodic health examination to discover in the individual the early signs of impending chronic diseases—for example, the discovery of *cancer* in its early stages when a *cure is possible.*

It should be realized that cancer is one of the most fundamental and difficult problems that confront biologic science. It involves the question of growth, because all cancerous tissue possesses the common habit of disorderly growth. Such fundamental questions cannot be answered in a

*A Twenty-Five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of CALIFORNIA AND WESTERN MEDICINE. The column is one of the regular features of the Miscellany Department of CALIFORNIA AND WESTERN MEDICINE, and its page number will be found in the front cover index.

† Editor's Note.—This is an abstract of an unprinted lecture by Dr. A. C. Ivy, professor of physiology and pharmacology, Northwestern University, Chicago, Illinois. CALIFORNIA AND WESTERN MEDICINE is indebted to Professor Ivy for his permission to print this excellent defense of animal experimentation.

For an article on Antivivisection by Chester Rowell, LL.D., see May, 1933, CALIFORNIA AND WESTERN MEDICINE, page 352. The October, 1934, CALIFORNIA AND WESTERN MEDICINE, page 247, prints an article by Dr. A. C. Ivy on "Some Contributions of Animals to the Health of Man."

brief period of time, and can only be answered by long-continued and intensive study. But the fight is on and much progress has been made. Cancers have been transplanted from one animal to another of the same family. They have been produced experimentally through chronic irritation. Some cancers have a distinct hereditary tendency. It is by such knowledge, gained through animal experimentation, that the war on cancer, which kills more than one hundred thousand persons yearly in the United States, will be won.

DISCOVERIES RESULTING SOLELY OR CHIEFLY FROM EXPERIMENTS ON DOGS

1. *Insulin,* which controls *diabetes* in man and dog. There are one million people living in the United States today who now have or later will develop diabetes, and who will have their *lives prolonged and enriched* by the use of insulin. This discovery was made solely on dogs.

2. *Liver extract for pernicious anemia.* Liver extract causes the blood to *return to normal* in patients afflicted with this disease. Liver was found to be a good food for anemic dogs. This was applied to patients with miraculous results.

3. *Treatment of parathyroid tetany.* Prior to 1925 practically all patients afflicted with this dreadful disease died. *Today no patient need die of this disease.*

4. *Ethylene anesthesia.* The discovery of many and our knowledge of the action of all anesthetics and sleep-producing drugs have come chiefly from experiments on dogs.

5. *Ether,* which has been called the "greatest gift of medicine to mankind," was first tried out by Dr. W. T. G. Morton in a series of experiments on his own dog. His success in the dog led to a trial in man.

6. *Rabies treatment.* The use of the Pasteur treatment for rabies (mad-dog bite) has reduced the mortality from 16 per cent to less than 1 per cent. There is a *preventive treatment for dogs* which protects them to a great extent against this disease.

7. *Hookworm cure.* The hookworm infests both man and dog. *One hundred million persons* in our own and in tropical countries are infested with this parasite. Most all we know about this parasite resulted from studies on the dog. Carbon tetrachlorid was found to rid the body of hookworm. Then, tetrachlorethylene was found to be as effective but less toxic to the patients. More than fifteen million treatments have been given to dogs and human beings.

8. *Treatment of Addison's disease.* Addison's disease is caused by disease of the adrenal glands. *These patients die slowly.* Recently it has been discovered by experiments on dogs and cats that *this disease can be controlled* by the administration of appropriate *extracts of the adrenal glands.*

9. *Contributions to chemical warfare service:*

(*a*) A satisfactory treatment for phosphorus burns.

(*b*) A satisfactory treatment for burns and other effects caused by poisonous gases.

(*c*) An improved method for treatment for lung irritants like phosgene.

(*d*) Effects of gas (automobile exhaust, cooking gas) poisoning and process of recovery.

(*e*) Facts bearing on shell shock.

(*f*) Facts bearing on treatment of traumatic shock, or shock following severe injury.

10. *Methods of resuscitation:* In drowning, coal-gas poisoning, and electrocution, cyanide poisoning.

11. Almost all we know about the *stomach, intestine,* and *liver.*

12. Much that we know about *heart action* and the effects of drugs on it.

13. Much that we know about *dropsy,* and *kidney disease.*

14. The accuracy of the indirect method of measuring *blood pressure* in man. When the physician takes the blood pressure, he and his patient should remember the *debt owed to the dog.*

15. Development of new operations:

(*a*) On the heart and its valves.

(*b*) On the lungs.

(*c*) On the blood vessels.

(*d*) On the brain.

(*e*) On the stomach and intestines.

(*f*) On the blood transfusion.

(*g*) On the ovaries and womb.

16. *Rickets,* a common disease that affects children and young animals. The first experiments bearing on the cause and cure of this disease were performed on puppies. Now *this disease can be prevented and cured.*

17. *Antidotes* to veronal and luminal (sleeping drugs) poisoning.

18. *On the action of some powerful drugs.* The action of a number of medicines: *epinephrin,* which is used to check hemorrhage and to abolish distress in asthma, is tested on dogs by United States Government requirement. *Pituitrin,* a drug used in childbirth, is tested on guinea-pigs and dogs. *Wood alcohol* was first shown to be harmful by experiments on dogs, and the cause of "ginger jake paralysis" was found by studies on the dog.

TO SUMMARIZE

The dog's contribution to our knowledge of the function of the organs of the body would fill a volume. Scientists, who know their business and duty to society, just as the lawyer, banker, engineer, and architect know their business and duty, hold that the dog is necessary for experimental purposes. Detailed reasons cannot be pointed out to lay persons, because they do not know enough anatomy and physiology. But the following general statements can be made: *Dogs are necessary* because—

1. They can live a healthy life in relative confinement.

2. They are large and their structures can be easily operated.

3. Like man, they eat all kinds of foods.

4. They have diseases in common with man.

5. Structurally and functionally they are very similar to man.

6. They are so numerous that in large cities thousands are picked up and killed yearly. Of

these, a small number are drafted for humane experiments, the results of which serve dog and man alike.

When a dog is operated on, it is put to sleep or a powerful pain-killing drug is used.

WHAT SCIENCE HAS DONE FOR THE DOG

1. We can now prevent and cure rabies in the dog.
2. We can now kill the hookworm, which infests dogs as well as man and which makes it difficult for dog fanciers to raise dogs.
3. We can now prevent and cure blacktongue in the dog.
4. We can do much to prevent and control distemper. The treatment is not perfect and further experiments must be done on the dog for the good of the dog.
5. We are now working to find a medicine that will kill the cruel heartworm in the dog.
6. We know how to operate on the dog and cure certain diseases of the thyroid gland and intestines.
7. We are learning about "puppy birth" in the dog which is important to dog fanciers.
8. We can prevent diseases in the dog due to improper food. Dogs need vitamins just as other animals do.

WHAT HAVE THE OPPONENTS OF ANIMAL EXPERIMENTATION DONE FOR EITHER MAN OR DOG?

Nothing! The opponents of animal experimentation, known also as antivivisectionists, would prevent experiments on dogs for the sake of dogkind. Antivivisection would make it impossible for veterinary science to experiment on one dog for the sake of dogs as a group.

Also, the opponents of animal experimentation themselves profit daily from the benefits of animal experimentation. They do not sense the fact that city life could not exist as we now know it if animal experimentation had not been practiced in the past. Without the knowledge which has come from animal experimentation, the grim specters of plague, typhus, yellow fever, malaria, and typhoid would still be rampant among us. Diphtheria would still take its toll of children's lives. Surgery would be primitive and anesthesia inadequate and unduly dangerous. Our knowledge of the function of the organs of the body and of life processes upon which the progress of medicine and the diagnosis of disease depends, would not have been gained, unless cats, dogs, guinea-pigs and other laboratory animals had been used. Scientific knowledge and the discoveries of medical science do not fall from the heavens like the manna upon which the children of Israel fed, but must be obtained through the arduous and persevering use of the scientific or experimental method. This method is the only known and proven method by which the warfare on disease may be conducted adequately and effectively. The opponents of biologic and medical progress would abolish this method, the use of which has been and still promises to be of such tremendous value to mankind.

It should not be forgotten that when crops are threatened with parasites, when farm animals and the human family are threatened by an epidemic disease, the legislators and citizens turn to the biologist and medical scientist for aid, and that the work of public health agencies are carried on either by, or under the direction of men and women trained in the medical sciences. The public has and must continue to manifest confidence in the moral and intellectual integrity, the sincerity of purpose and the humaneness of its biologists and medical scientists. The public must support them in their work, if in the future the public shall expect to benefit to a maximum extent, as it has in the past by expert advice, because expert advice is based on scientific facts which come from experimentation.

TRUSTS OPPOSING ANIMAL EXPERIMENTATION NOT CHARITABLE

"Animal experimentation as a means of promoting human and animal welfare has recently received the sanction of two tribunals of great importance, one in the United States and the other in England."

In the American case, the United States Board of Tax Appeals (25 B. T. A., Penn. Co. Insurance on Lives and Annuities, Executive Estate of A. S. Logan, deceased, petitioner v. Comm. Int. Rev., respondent) held that a bequest to a society organized for "the total abolition of all vivisectional experiments on animals and other experiments of a painful nature" was not a bequest to a corporation organized and operated exclusively for the prevention of cruelty to animals, and that the amount of such a bequest could not be deducted in computing the federal estate tax.

In the English case the Court of Appeal (The Law Journal, 71:329, 1931) raised the question whether "in the light of later knowledge in regard to the benefits accruing to mankind from vivisection," bequests designed to hinder and prevent vivisection would today be regarded as charitable bequests. On appeal, the House of Lords forbade the use for antivivisection propaganda of any part of the legacy concerning which the question was raised.

"Probably these two decisions represent the general trend of mature and cultured thought on the subject of animal experimentation, when uninfluenced by lurid appeals to the imagination. Both decisions were based on the orderly presentation of legal evidence, not on such clamorous, virulent, emotional speech-making as commonly fills the air when animal experimentation is discussed" by antivivisectionists before legislative committees.

Northwestern University,
303 East Chicago Avenue.

SOME OPINIONS ON ANIMAL EXPERIMENTATION

Jane Addams, Hull House, Chicago: Dr. A. J. Carlson, a distinguished professor of the University of Chicago, during the World War made a most valuable

study of the piteous children who were suffering from starvation, and for months worked on their behalf in southeastern Europe. Immediately after the war I accompanied a scientific friend, whose discoveries in industrial diseases have necessitated research with living animals, in a survey of the war children throughout one country after another.

It is impossible to associate either Dr. Carlson or Dr. Alice Hamilton with inhumanity or lack of tender care for helpless creatures; to charge them, or their scientific colleagues, with cruelty is utterly to misapprehend them and their motives.

* * *

Charles W. Eliot, LL.D., President-Emeritus, Harvard University: We owe to scientific experimentation on animals the means of saving hundreds of thousands of children within the past fifty years, and untold millions of children in the coming years. But it is not human beings alone that owe an immense debt to modern animal experimentation. Animals also owe to vivisection great deliverance from disease and death. All the agricultural industries in the United States are deeply indebted to animal experimentation.

* * *

Harry Pratt Judson, until recently president of the University of Chicago: Men of real scientific attainments must not be prevented from pursuing their investigations for the benefit of humanity by idle sentimentality.

* * *

His Eminence, Denis Cardinal Dougherty, Archbishop of Philadelphia, Pa.: To forbid vivisection would be to hamper science, do a mischief to the human race, and foster misplaced sympathy.

* * *

Right Reverend C. H. Brent, Bishop of Western New York: I sincerely hope that the efforts made by the antivivisectionists to eliminate this mode of scientific investigation will not meet with success.

* * *

Reverend John Haynes Holmes, Minister of the Community Church, New York: As regards the surgeons who are engaged in this business of vivisection, I have to state that I do not believe for a single moment the charges that are so wantonly brought against them. I know some of these men. I have met the most distinguished of them, who has been for years under most virulent attack. I have gone through his laboratories, I have witnessed his performance of a vivisection experiment, which was of the character of most severe major operations. To accept the charges of cruelty against scientists of this type—this is a thing impossible to me.

* * *

Ernest Thompson Seton: I learn now from your reply to the Baynes article that you (the opponents of medical science, called antivivisectionists) are opposed to all experiments on living animals, and that you utterly condemn the work of the Pasteur Institute, the Rockefeller Institute and allied laboratories. I have to thank the studies of such institutions for the fact that my wife is alive today. Kindly accept my resignation from the Vivisection Investigation League, to take effect immediately.

* * *

Colonel David S. White, Chief Veterinarian of the American Expeditionary Forces: Anyone who is familiar with what vivisection has done for mankind and animal kind must realize its value to the world.

* * *

William J. Mayo, M. D., The Mayo Clinic, Rochester, Minn.: My brother and I are strongly in favor of vivisection. In the clinic there are large laboratories in which a number of physicians are constantly at work on investigations which depend on animal experimentation.

* * *

President Angell of Yale University: We find no obstacle to the practice of animal experimentation in any intuitive moral convictions, nor in the traditional morality of our race.

CLINICAL NOTES AND CASE REPORTS

PALILALIA

By W. A. Oliver, M. D.
San Francisco

PALILALIA, a rather unusual speech disturbance, was first described, or at least recognized as a distinct entity, by Souques[1] in 1908, and it was he who so named it. Several comprehensive studies and descriptions appear in the foreign neurological literature; but as there is a scarcity of such material in this country, it may be well to review the essential characteristics of this condition.

It consists in uncontrollable repetition of normally articulated words and phrases, and even entire sentences. The patient is conscious of the condition, but powerless to inhibit it, and Marie and Levy[2,3] have reported cases which proceeded to a total mutism because of a self-admitted unwillingness to speak repetitions.

When Souques presented his first case, that of a woman fifty-nine years of age, in whom there was a left hemiplegia and mental deterioration, Meige and Dupre in their discussions were of the opinion that the condition was psychopathological; but there has been sufficient evidence since then to show that it is of a different order.

CHARACTERISTICS OF PALILALIA

Nearly all cases present a definite group of characteristics. As stated above, the words are normally articulated. Another is the acceleration in the delivery, with concurrent diminution in loudness, producing a "diminuendo" effect, often with the final utterance almost inaudible. The speech is monotonous, and for the greater part mono- and paucisyllabic. Words, and groups of words, are repeated a varying number of times, from two or three to fifteen or more.

DIFFERENTIAL DIAGNOSIS

As Critchley[4] and others have pointed out, there are only two or three conditions which are capable of being confused with palilalia. Stammering is characterized by repetitions, but of syllables rather than words and sentences. The reiterations occurring in some cases of aphasia are distinguishable by the presence of the aphasia itself, as palilalia is not accompanied by any aphasic manifestations.

Echolalia, paroxysmal tachyphemia, palilogia, verbigeration, etc., each have definite and well-known characteristics which serve to differentiate them from true palilalia.[5]

ASSOCIATION WITH OTHER DISEASES

Palilalia has occurred in all cases so far reported in conjunction with two disorders, namely postencephalitic Parkinsonism and cerebral arterial disease. Of the latter, most of the cases have been of pseudobulbar types, but there have also been both left and right hemiplegias, without the pseudobulbar syndrome.[8,9,10]

As Critchley so aptly points out, these two diseases (Parkinsonism and pseudobulbar palsy) have certain characteristics in common: " . . . generalized rigidity of greater or less degree, . . . asthenic muscular state, and an upset in the ratio of automatic, to volitional movement. Thus in both conditions we find the play of volition or quasivolitional activity reduced to its minimum, as exemplified by the fixed and wooden facies, the statuesque pose, the poverty of spontaneous movement and lack of play of gesture." He thus finds an analogy between palilalia and the festinating gait of Parkinsonism, and we may extend the analogy to some of the tonic and clonic perseveration phenomena of the disease, *e. g.,* the inability to open the eyes after closing them, etc. Further evidence in support of this view is seen in what may be called the automatic speech functions, *i. e.,* singing, and reciting of well-known verse, where repetition does not take place. Nor are the expletives as a rule repeated; it seems that only when there is mental effort involved in forming the delivery does the phenomenon occur.

AUTOPSY REPORTS IN THE LITERATURE

Autopsy reports on these cases are not only few, but there is wide variation in the location of the findings. Trenel and Crenon[6] report a case in which they found a sclerosis of one cerebellar hemisphere, and several areas of degeneration in the corpus callosum. Pick[7] reports three cases, in the first of which were areas of softening in the right putamen, the head of the left caudate nucleus, the left subthalamic region, and the corpus callosum. The second showed a large area of softening in the region supplied by the left sylvian artery. The third showed lacunae in the right caudate and lenticular nuclei. Autopsy on one of Critchley's cases revealed numerous vascular lesions located in the right external capsule, the right side of the pons, and the left lenticular nucleus; also many areas of softening in the whole cerebrum, with generalized shrinking, convolutional atrophy, and internal and external hydrocephalus. Marie and Levy[4] report a case in which no abnormal findings were discovered in the brain. It would, of course, be difficult to draw any conclusions from this evidence.

REPORT OF CASE

The patient is a married woman, aged 64. The history as given by her daughters is as follows: Six years ago she went abroad. The daughters received a cable that she had had a "nervous breakdown" and was being brought home. When they next saw her, three weeks later, she was extremely restless and excited, talking constantly, saying that she feared she was "losing her mind, was a disgrace to the family, didn't know what was to become of her, wished she could die," etc. She nearly always ended a sentence with the words "this and that" or "and everything." She did not repeat words at that time, but repeated the same ideas constantly.

The daughters also noticed that the left side of her mouth drooped, and that there was twitching of the left side of the face, but did not notice that there was any weakness of the left arm or leg. She has had several periods in the past four years of extreme combativeness, combined with persecutory delusions.

Present examination shows a woman of advanced years, of irritable and explosive temperament. She is at present quite clear and well oriented, extremely observant of surrounding events, and conscious of her infirmity. She is, however, rather suspicious and uncoöperative, and is difficult to handle; but there are no delusions or hallucinations. This unpleasantness and irritability is quite the reverse of her normal nature, which was one of amiability and normal social tendencies. The facial expression is fixed, assuming a constant scowl, and the patient, under our observation, has never been known to laugh or cry.

The physical findings are limited to a slight thickening of the peripheral vessels, and a blood pressure of 182/90.

Neurologically, the patient shows a normal gait except for a slight limp due to an old hip injury. There are normal pendulum movements of the arms. The Romberg is negative; there is no ataxia of the arms or legs. The sensory functions are intact throughout. Of the cranial nerves, the only one affected is the seventh, shown by a left facial weakness of the upper motor neuron type. There are no other muscular weaknesses. The deep and superficial reflexes are all present and normally active. The Babinski and Hoffman signs are negative. There are no abnormal findings in the laboratory work.

The condition of chief interest, that is, the speech disorder, consists in constant monotonous vocalization throughout the waking hours, whenever under observation, with repetition of words, groups of words, and sentences. In the intervals not filled with actual conversation, the patient repeats endlessly, "and everything and everything and everything, and things of this kind and things of that kind and things of this kind and things of that kind and this and that and this and that and this and that and this and that and this and that," these being the stock phrases, with very little variation. A conversation is as follows:

"How do you feel this morning?"

"I don't know I don't know I don't know I don't know."

"You seem a little better today."

"No I'm not no I'm not I'm just the same just the same just the same."

"How do you like that new medicine?"

"It isn't it isn't doing me a bit of good it isn't doing me a bit of good." This entire sentence might be repeated five or six times.

"Do you like the taste of it?"

"NO!" Expletives are usually shouted, and are not repeated.

The words are spoken in a rather low monotonous tone, well articulated. The monotony is occasionally broken by expletives, as shown above. When she becomes particularly interested in what the examiner is saying she stops speaking entirely for a few moments, but otherwise all intervals in conversation are filled with the words given above.

There is no tendency to shortening of sentences to any marked degree, nor is there any of the decrescendo effect noted in previously reported cases. As in these other cases, this patient is able to repeat well known poems and quotations without repetition of words. Further, there is no repetition of written words (paligraphia).

COMMENT

This case belongs to the group having cerebral arterial disease, as evidenced by the general signs of arteriosclerosis, and by the seventh nerve weakness. It conforms in most respects to all previous descriptions of palilalia, except that these did not show the unceasing vocalization of monotonously repeated words that we have here.

Efforts to control the repetition by medication have all been unsuccessful—bromids, various barbitals including veronal, phenobarbital, medinal, ephedrin, stramonium, and hyoscin, all have been without effect in reducing the amount of repetition.

One rather peculiar feature, however, has been noticed in this patient, and that is that during the past two years there has been a tendency for the condition to become better and worse at times. The repetition of words never completely disappears, but there will often be periods of two or three weeks during which it is barely noticeable. These cycles bear no relationship to medication, or to any other external feature that can be discovered.

490 Post Street.

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UMBILICAL ENDOMETRIOMA

By Elmer M. Bingham, M. D.
AND
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ENDOMETRIOSIS of the umbilicus, or umbilical endometrioma (adenomyoma), is one of those rare conditions which is reported singly or in small groups of cases. Spitz,[1] reviewing the literature in 1932, found fifty-four reported cases and added one of his own. In 1933, Lanos and Busser[2] reported one case, and Herberz[3] three cases. With the last published case by Galasso, Sherman, and Burn,[4] the total to date is sixty. Nearly half of these have been reported in the last decade.

The above authors, with Heaney,[5] Cullen,[6] and Lemon and Mahle,[7] have well covered the theories as to the origin of these tumors. While not malignant, these growths of ectopic endometrial tissue have been known to recur and to metastasize. In view of the frequency with which operative procedures precede the appearance of these tumors, the theory of implantation and transplantation should possibly be given more credence. Cullen[8] states that adenomyomata occurring in abdominal scars are due to transplants, while those of the umbilicus are due to embryonic inclusions.

The case reported here is the second occurring in negroes.

REPORT OF CASE

Mrs. H. M., a negro woman of thirty-eight years, was admitted to the Riverside County Hospital on October 3, 1932. She complained of a hard mass in the region of the umbilicus, first noticed four months before, and rather painful at times. She had had a hysterectomy six years previously, at which time a ten-pound fibroid was removed. She had been married eleven years; no pregnancies. General examination showed a moderate hypertension. There was a surgical scar extending from the symphysis pubis to two inches above the umbilicus. There was a firm tumor mass two centimeters in diameter at the lower margin of the umbilicus, medial to the scar, irregular and nodular. It protruded into the umbilicus only slightly. Laboratory: Blood Wassermann, negative; urinalysis, trace of albumen; hemoglobin, 65 per cent.

On October 7, under spinal anesthesia, this tumor was removed. It was found necessary to remove a section of the peritoneum, four centimeters in diameter, in order to surround the mass which was adherent

Fig. 1.—Umbilical Endometrioma. Low power field.

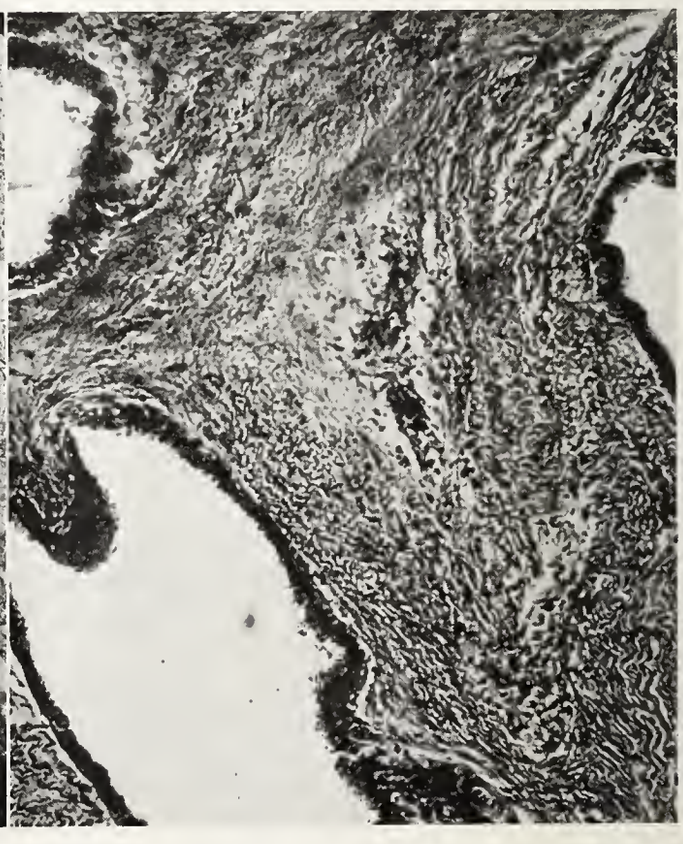

Fig. 2.—Umbilical Endometrioma. High power field.

to it. Convalescence was uneventful, except for slight serous drainage from the lower angle of the wound.

Pathological Report.—Report by the College of Medical Evangelists, Loma Linda, follows: Specimen consists of the umbilicus and surrounding tissues, 9 by 5 by 3.5 centimeters. An irregular area of scarring beneath the umbilicus contains a number of canalis filled with chocolate-like material. Microscopic section contains a number of collections of glands resembling endometrium. Cells lining the larger glands are compressed. Diagnosis: Endometriosis of the umbilicus.

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WHOLE BLOOD BY INFUSION AND TRANSFUSION IN INFANCY

By Edwin F. Patton, M. D.
Los Angeles

IN many of the severe crises of infancy, the difference between recovery or death depends on a powerful temporary supporting restorative.

Nothing will provide this so well as blood.

The most effectual method of giving blood is by transfusion. Infusion is helpful, and may be sufficient, but should not be regarded as more than an approach to transfusion.

Infusion is useful chiefly to improve powers of coagulation in hemorrhagic diatheses, to immunize against measles, or to improve resistance to poliomyelitis, pertussis, and other contagious diseases.

The quantity of blood to be transferred by infusion is restricted, 20 to 30 cubic centimeters being the usual upper limits. In transfusion the upper limit may reach 10 cubic centimeters per pound of body weight, or even more if there has been loss of blood volume.

Infusion is usually given deep in the buttock, the thigh, the back, or the abdominal wall.

Infusion requires no preliminary typing or grouping. Blood from any healthy Wassermann-free and malaria-free donor may be used. It can be given with or without citrating. The citrated blood is absorbed more quickly, and is just as effectual. The only objection is a very infrequent reaction which may be ascribed to the sodium citrate (.2 of 1 per cent), used to prevent clotting.

Transfusion requires pretesting of bloods for compatibility. Though infants seldom determine their fundamental blood groups before a year of age, their cells and serum do react to other cells and serum. Consequently, it is unsafe to proceed without cross-agglutination tests. For best results, there should be no agglutination either way.

Transfusion almost always requires cutting down on a vein, though in larger children the external jugular or those veins in the ante-cubital space may be large enough to enter through the skin. A readily accessible vein is the internal saphenous, found just above the internal malleolus, and exposed through a half-inch, semi-circular incision.

Intraperitoneal transfusion is still used, though it is looked upon with misgivings by most operators, who have also abandoned the anterior-fontanel route as dangerous and unnecessary. It is much better to use a vein.

Whether blood for transfusion is to be citrated or not depends on the efficiency of the transfusing crew. Where speed is possible, it is not necessary. Where time may elapse, citration facilitates the procedure a great deal. There are those who advise avoidance of citration, if possible. Many others, myself included, see no disadvantages and many advantages in citration.

Reaction to transfusion is minimized by using as little rubber tubing as possible, by drawing blood from a donor who has not eaten for six to eight hours previously, and by adding a little adrenalin to the blood being injected, about one minim of 1-1000 adrenalin to a hundred cubic centimeters of blood.

One of the chief difficulties of transfusion is holding the needle in the vein while changing syringes. This is avoided by utilizing a small side-entry syringe as a needle carrier, and injecting the blood from larger syringes through this syringe by means of a short rubber tube to the side opening. As many injections may be made as desired without touching the needle.

Transfused blood is a boon in cases of melena, anemia, hemorrhage, marasmus, septicemia, chronic or severe infection, intoxication, digestive intolerance, hemolytic diseases, shock, and preoperatively. Numerous other indications are listed. In fact, there are probably more occasions for it in infancy than in later life.

Transfusion in pediatric cases should not be left as a last resort, but should be employed freely as an early-stage resource of immense value.

3875 Wilshire Boulevard.

Long Beach Controls Dogs.—A determined drive against stray dogs has been started in Long Beach in order to check the spread of rabies in the community and in its vicinity. Strict enforcement of the dog license ordinance will result, it is expected, in the impoundment of six thousand dogs. It is estimated that there are twelve thousand dogs in Long Beach, but only three thousand licenses have been issued annually. Many s ray dogs are brought to Southern California cities by tourists and left to fend for themselves. Stray dogs will be picked up and confined at the animal shelter, which will be under the direct supervision of Dr. S. G. Arnold, city health officer.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

RELATIVE PHARMACOLOGICAL EFFECTIVENESS OF URINARY ANTISEPTICS

Chauncey D. Leake, Ph.D. (University of California Medical School, San Francisco).—In the direct local application of solutions of antiseptic agents to the mucous membranes of the urinary tract, the same pharmacological principles of antisepsis hold as are concerned in the application of antiseptics to other mucous membranes in the body. In general, the agent must be such a one as will have a bactericidal action without causing local irritation or injury. Since the cells comprising these mucous membranes are living like the bacteria, this is difficult to accomplish. The milder antiseptics in dilute concentrations (such as mercurochrome 1 per cent, acriflavin 0.1 per cent, and merthiolate 0.1 per cent) are preferable for this purpose. However, it is my opinion that the mechanical effect of irrigating the tissues with the solution is an important factor in the presumed antiseptic effect. For urethral irrigation in gonorrhea strong silver protein in 0.1 per cent solution is effective, but may be irritating. In cystitis 30 cubic centimeters of a 10 per cent mild silver protein solution may be very useful.

The pharmacological interest in urinary antiseptics is, however, in connection with agents which may be administered by mouth, absorbed into the body, and excreted by the kidney. Most antiseptics taken by mouth are excreted in such combinations with detoxifying agents in the body as to render them inactive.

The classic agent for urinary disinfection is methenamin U. S. P. ("Urotropine"). In acid medium this is supposed to hydrolyze in part with the formation of formaldehyd according to the following equation:

$$N_4(CH_2)_6 + 6H_2O = 4NH_3 + 6HCHO$$

When taken by mouth, methenamin is rapidly absorbed, and excretion in the urine is completed in twelve hours. On repeated administration a concentration as high as 0.05 per cent can be reached in the urine. No antiseptic action can be exerted, however, unless the urine is acid. Then, as shown in the classic paper of Hinman,[1] enough formaldehyd may be produced to reach a concentration as high as 0.01 per cent. However, some of the methenamin taken by mouth may be destroyed in the acid medium of the stomach, again with some formaldehyd formation. De Eds[2] found 30 to 80 per cent methenamin excreted in the urine; but if the drug is given with sodium bicarbonate, the entire dosage is excreted unchanged. While the use of sodium bicarbonate will prevent destruction of methenamin in the stomach, it also renders the urine alkaline, so that the antiseptic value of the methenamin is lost. A recommended method of administration of methenamin is to give the drug in a large quantity of water before meals so that fairly rapid absorption may occur. In some individuals, doses of methenamin as small as 0.2 grams may produce irritation of the urinary tract. In other patients it may irritate the kidney and cause hematuria. While acid urine is itself bactericidal, as shown by Jordan,[3] it is also irritating, particularly when inflammation is present. It is very desirable, therefore, to find a urinary antiseptic which will act in an alkaline urine. Attempts to devise preparations of methenamin for this purpose have so far not been very successful.

Certain preparations of crude drugs, such as copaiba, uva ursi, cubeb, and oil of sandalwood, have been used as urinary antiseptics, especially in gonorrhea; but they have been shown to have very feeble action on most organisms leading to urinary putrefaction. Salicylic, benzoic and boric acids by mouth have also been recommended for urinary antisepsis, but they may be locally irritating to the stomach and are not particularly efficacious. Acriflavin and proflavin by mouth, in dosages of 0.1 gram every few hours, deserve more use than they have been accorded. Acriflavin in a concentration as low as 1:200,000 will destroy gonococci in urine.[4] These dyes are particularly useful because they act more strongly in an alkaline than in an acid urine, so that the local irritation of an acid urine in a kidney infection may be alleviated by giving some sodium bicarboate with them. Methylene blue is too slow and weak a germicide to be effective as a urinary antiseptic.

A great advance in urinary antisepsis was made by Leonard[5] in the introduction of hexylresorcinol. This is relatively non-irritating by mouth when administered in oil solution in gelatin capsules, and is rapidly absorbed and excreted largely in conjugated form in the urine. The small amount excreted uncombined is highly bactericidal, and is not modified by the normal range of urinary reaction; although this action is lost after the administration of large doses of sodium bicarbonate. It does not irritate the kidneys or the urinary tract, and its systemic toxicity is not clinically significant. It seems to be very effective in cystitis and pyelitis caused by streptococcus, staphylococcus and B. pyocyaneus. It is not as effective against B. coli. The dosage is two to

1 Hinman, F.: Urinary Antiseptics, J. A. M. A., 65:1769, 1915.

2 De Eds, F.: Arch. Int. Med., 34:511, 1924.

3 Jordan, H.: Urinary Antiseptics, Brit. M. J., 2:648, 1913.

4 Davis, E. G.: J. Urol., 5:215, 1921.

5 Leonard, V.: J. A. M. A., 83:2005, 1924.

four gelatin capsules daily, each capsule containing 0.15 grams dissolved in olive oil.

Shortly after the World War, a Russian pharmacologist induced a number of American pharmaceutical manufacturers to become interested in certain azopyridin dyes as non-toxic and non-irritating urinary antiseptics. The two which have been most extensively used are "pyridium" and "serenium." These are rapidly eliminated through the urinary tract, after oral administration, and are generally antiseptic in aqueous solution. They are administered in doses of 0.2 grams two or three times daily in tablet form. They impart a deep color to the urine. Although "pyridium" was admitted to "New and Nonofficial Remedies" in 1930, it has more recently been removed because of lack of sufficient clinical evidence as to its value. "Serenium" was never admitted to "New and Nonofficial Remedies."

The newer developments in urinary antisepsis have not taken away clinical interest from methenamin and acriflavin. If methenamin is used with a ketogenic diet, or with sodium acid phosphate, to keep the urine sufficiently acid for formaldehyd formation, it seems to be quite useful on the basis of present evidence. However, in many cases a strongly acid urine may be too irritating for the patient. Under these conditions, if alkalinization of the urine with sodium bicarbonate may be accomplished, acriflavin by mouth may be recommended. Hexylresorcinol ("Caprokol") appears to be effective as a urinary antiseptic against certain organisms in any ordinary range of urinary acidity.

* * *

Robert V. Day, M. D. (1913 Wilshire Boulevard, Los Angeles). — When taken internally, administered subcutaneously or injected intravenously, a considerable number and variety of *pharmaceuticals* are known to impart slight bacteristatic properties to the urine *in vitro*. This bactericidal or bacteristatic effect can be roughly estimated or assayed *in vitro* against a known culture of various species of bacteria. Up to the time of Pasteur and Koch, all of these—like santal oil, copaiba, cubebs, etc.—must have been prescribed on a basis of empiricism and clinical observation. But just how much they accomplish in actual clinical practice in the matter of modifying the course of urinary infections, and become a therapeutic factor in clearing up these infections, has been a somewhat controversial question. In a way, the psychological angle up to now has somewhat paralleled the medieval alchemists' dream of transmutation of metals: always hopeful, always experimenting, always disappointed, never quite discouraged. There can be little doubt, however, that in the occasional instance some of these so-called urinary antiseptics do effect a favorable therapeutic influence. The disappointing feature is that the beneficial effect occurs in such a small percentage of cases, and that it is impossible, in advance of individual clinical trial, to predict what particular case, or type of case, will be benefited. Of course if one shuts his eyes, so to speak, and from the manufacturer's literature or other source has, on the theoretical grounds, made up his mind in advance, then he often reports clinical results which cannot be confirmed by the impartial and objectively minded observer. But withal, since in the occasional case some of these drugs do have an appreciable or seeming beneficial effect on urinary infections, we cannot, therefore, entirely discard them; although in most instances not one of them is dependable, nor in the overwhelming majority of cases is attended with any demonstrable therapeutic influence.

I am not one of these who believe in prescribing these drugs routinely, though I formerly followed that practice, sometimes experimentally. When other rational, recognized and dependable urological methods fail to produce expected results in a given case, one may well proceed to find out what, if anything, the so-called urinary antiseptics can accomplish, and hope for the best. Occasionally one is surprised and gratified with the seeming effects of any of these drugs. Then in chronic, and for the most part incurable infections, like cord-bladder, etc., they may in some degree (especially hexamethylenetetramin), prove beneficial in holding these infections in bounds. Again, in case of a patient with a hyperacute posterior urethritis, acute prostatitis or epididymitis, where it is necessary to discontinue all local instillations and injections, the use of urinary antiseptics, especially one which imparts to the urine a striking hue, is frequently a source of mental comfort to both the patient and the physician, and at times in such a case seems to have an appreciable therapeutic value aside from the psychologic angle. At any rate, it is sometimes any port in a storm. Finally, placebos are ofttimes indispensable.

The most important factors in combating the common pyogenic infections are (1) natural resistance to infections, and (2) overcoming hindrance to drainage. The first usually becomes amplified during the course of the infection, and nature has ways of promoting better drainage in spite of the fact that the surgeon can frequently accomplish this much quicker with a better end-result. A frequent occurrence is the almost magical subsidence of an acute pyelonephritis, following simple ureteral catheterization. Ureteral dilatation and better drainage is the undoubted explanation of this phenomenon. Without these two factors, natural resistance and drainage, therapy is inefficient and with them the effect of bactericides adds little, if anything.

In an organ like the kidney it seems plausible that the transudation of bactericidal substances, through the glomerulus and tubules, should exercise a certain antiseptic effect. In clinical practice, however, it would seem that the theory is fallacious.

Most of the claims for the efficiency of urinary antiseptics are based on the fact that the patient's urine in some degree is rendered bacteristatic. From a clinical standpoint this is of little importance. The patient's interest requires that either the subjective symptoms be ameliorated or the objective findings diminish, or both. Furthermore, this should be subject to actual demonstration by comparison with a series of control cases. Bac-

terial counts are misleading. For example, the patient with the greatest number of bacteria per cubic millimeter in the urine, is the bacilluria case without pus or albumen (or blood), with no fever and no other symptoms. This patient is potentially a case of urinary infection, because there exists a latent mechanical factor somewhere in the urinary tract; but when infection is lighted up and pyuria begins, the actual number of bacteria then becomes much smaller. Had it been possible to discover and overcome the mechanical factor involved, the bacteriuria would have disappeared without a clinical flare-up.

Therefore, we should try to estimate the effects of urinary antiseptics by checking up on the clinical progress as regards the diminution or disappearance of such products of infection as pus and albumen, not merely by an all but worthless bacterial count. Besides that, other objective data, such as fever, leukocytosis, localized tenderness, etc., which, together with subjective symptoms and the urinary findings, afford us ample clinical indexes on which to draw practical conclusions.

1. The most accurate method of recording the amount of pus in the urine is that of Kretschmer. It consists simply in counting the number of white cells per cubic millimeter of urine by employing an ordinary blood-counting chamber. On the average, the time required for this count by a trained technician, without hurrying, is about three minutes. Having ascertained both the cell count and the volume output, we can readily calculate the total number of white cells whether for an hour or a day. Regardless of the varying rate of urinary excretion during the twenty-four-hour period, the absolute number of pus cells per hour should be fairly constant. Therefore, we should ascertain the length of time elapsing since the last previous urination, and note the amount voided. (In practice, noting the specific gravity affords one roughly the same information.) For if a specimen contains 100 white cells to the cubic millimeter, and is secreting 200 cubic centimeters per hour, the absolute number of pus cells is twice as great as when it has 100 white cells per cubic millimeter and is secreting *only* 100 cubic centimeters per hour.

2. Another quantitative clinical method is the employment of centrifugalization technique. The urine is first strongly acidified in order to dissolve phosphates, and centrifugalized in a graduated tube. The amount of sediment (volumetrically) is noted by the graduations, which are in fractions for the first one cubic centimeter at the bottom portion of the tube. In the absence of gross blood and excessive urates the sediment may be considered 99 per cent pus.

3. For reliably checking the effects of urinary antiseptics, one or other of the above methods is indispensable. In ordinary practice, however, a rough estimate of the degree of cloudiness from pus is obtained by looking at the urine in a clean glass vessel, provided the factor of specific gravity is noted and taken into the calculation. This principle could of course be made the basis of a more nearly accurate nephelometric technique.

If from one's patients, with urinary infections of the same type and about the same grade, one divides them into two approximately equal groups, one group ingesting urinary antiseptics and the other serving as controls, one then can obtain some valuable data, if he has employed the quantitative methods described above.

This data, taken in conjunction with other objective findings plus a consideration of the course and progress as regards subjective symptoms, enables one, I believe, to form a fairly reliable estimate of the value of urinary antiseptics. Such data have been the basis of my own conclusions.

One important fact must always stand out, viz.: That, notwithstanding in the rare case the urine does become sterile primarily as a result of the urinary antiseptic, the real etiologic factor nevertheless has in almost no case been removed, and in all probability there will sooner or later be recurrences; whereas by precise diagnosis the etiologic factor can in the majority of cases be determined and overcome. This applies to the matter of improvement after ketogenic diets. Ketogenic diet, being impracticable except in institutions, has the additional disadvantage of promoting potentially harmful metabolism and catabolism.

Of the old-fashioned drugs—santal, copaiba, cubebs, etc.—only santal oil is worth considering. It is excreted in the urine as a soluble sodium salt. The urine may become faintly bacteriostatic and rendered more bland.

For nearly forty years tens and tens of thousands of physicians over the civilized world have prescribed hexamethylenetetramin on faith and the inspired literature of the manufacturers and a plausible theory. In 1914, when inquiring minds began intensively to check up on its actual clinical value, it was found that its therapeutic virtues had been greatly exaggerated by its manufacturers and their agents and by physicians, who from their very traditions, perhaps extending back to primitive man, unconsciously tend to be therapeutic optimists. It was claimed by investigators at Johns Hopkins University that approximately 100 grams of hexamethylenetetramin per day was necessary to impart definite bactericidal or bacteristatic properties to the urine. This dose often produces unpleasant and even harmful effects. In acute posterior urethritis, acute cystitis or vesical tuberculosis, it increases the dysuria noticeably and not infrequently results in a more or less frank hematuria. Its administration is sometimes attended by loss of appetite and anorexia. As a prophylactic against infection preceding, and following urological procedures, both cystoscopic and surgical, there is little if any reliable evidence to warrant the conclusion that patients, so treated, do better clinically than those who receive no hexamethylenetetramin or other urinary antiseptic. I have tried both plans during long periods, and could discover no advantage in its routine employment.

Hexylresorcinal produces gastro-intestinal upsets of varying degree with such regularity that any beneficial effect it possibly produces, in rare instances, may profitably be ignored. It is now

being advertised extensively in lay periodicals with enormous nation-wide circulation.

The great number of yellow dyes that have been placed on the market, beginning with acriflavin, at the close of the World War, are, chemically considered, built up around the acridin base as a nucleus. Whatever bactericidal effects may be demonstrated *in vitro,* the clinical results have been deficient and disappointing; not, however, to gainsay that *occasionally* these drugs seem to give beneficial results. Their tendency to upset digestion, and the exorbitant prices, discourage their employment except where other therapeutic measures prove deficient or for the moment are contraindicated.

The only three cases of agranulocytosis which I personally have observed closely had recently been given long courses of one of these acridin dyes. Probably this is simply a coincidence; but in view of the well-known fact that certain of the closed-ring synthetic compounds have a decided and very definite effect on the cytological characteristics of the blood, it might be well to bear this observation in mind.

One unfortunate feature in regard to these dyes is that, when the patient appears for urological examination, for instance kidney study, the colored urine precludes, temporarily, the possibility of obtaining an even approximate kidney functional test.

Possibly the explanation for the favorable result occasionally observed after the use of urinary antiseptics is that the rapid multiplication of urea-splitting organisms is slowed down, thereby tending to break the vicious circle by hindering the factor of chemical trauma due to ammonium carbonate.

It seems to me that the outstanding and fundamental iniquity, in the employment of urinary antiseptics, is the widespread tendency to neglect accurate anatomic and functional diagnosis on which all rational therapy must be based. Unless ultra-virulent or overwhelming, practically all types of pyogenic infection, anywhere in the body, are eventually self-curative except when there is stagnation or hindrance to drainage. When the mechanical obstruction to drainage is overcome, recovery is usually prompt and complete; conversely if the obstructing factor continues, recovery is improbable, or punctuated by recurrences. For example, this drainage may be promoted in many instances by means of a urethral or ureteral catheter. In this connection, one must not forget that nature tends to eventually establish her own drainage in a percentage of cases of urinary infections just as elsewhere, and this probably accounts for the recovery of most of those cases treated with urinary antiseptics only.

The conclusion is that in actual clinical practice one should ordinarily expect no beneficial effects from urinary antiseptics; but if perchance such good effects ensue, one should consider it just a fortunate wind-fall. Prescribe urinary antiseptics for whatever reason you choose; but do not neglect precise diagnosis and rational therapy based thereon. Prescribing the urinary antiseptics available up to now has, for the most part, proved to be just empiricism, and a self-deceiving dream of those who wish to believe in the philosopher's stone.

* * *

Frank Hinman, M. D. (384 Post Street, San Francisco).—1. *Introduction.* Internal medication is a popular method of treatment of urinary infections, in spite of the fact that the results are wholly unsatisfactory and unreliable. This failure may be a blessing in disguise, because a really efficient internal urinary antiseptic which would clear pus and organisms quickly from the urine would be a menace to early urological diagnosis. Secondary infection is the common cause for an investigation which leads to the discovery of some urogenital abnormality unsuspected before the advent of the infection. It has become axiomatic in the pyurias of children to investigate only those which fail to clear after prolonged internal medication, and even these chronic cases might be removed from the benefits of urological study if an efficient antiseptic existed. With the introduction of more and more efficient urinary antiseptics, better and better judgment will be required in the differentiation of the conditions which cause pyuria. The infections associated with some abnormality of the urogenital tract must be distinguished from the infections unrelated to any such abnormality. Urinary obstruction is a common cause of infection which disappears, as a rule, without other treatment than removal of the obstruction. It is important, therefore, to have a classification of urinary infections in mind in the discussion of the relative efficiency of the different urinary antiseptics, and the following is a practical one from the clinical standpoint:

I. Specific infections (gonorrhea, tuberculosis, etc.).
II. Nonspecific and pyogenic infections.
  A. Of the lower tract (including cystitis).
    (1) Associated with obstructions.
    (2) Associated with infections of the seminal tract.
  B. Of the upper tract (including cystitis).
    (1) The urogenitogenous group of renal infections.
      a. The obstructive type of renal infections.
        1. Obstructive types of renal infection without much back pressure change.
        2. Infected hydronephrosis.
      b. The urethral type of urinary infections.
        1. Renal infection secondary to urethritis.
        2. Renal infection which follows instrumentation.
        3. Renal infection caused by cohabitation.
        4. Spontaneous ascension of infection.
    (2) The focal group of renal infections.
      a. Acute staphylococcic nephritis, cortical abscesses and carbuncle.
      b. Focal pyelonephritis.
        1. Acute.
        2. Chronic.
        3. Atrophic.
      c. Intercurrent nephritis and pyelonephritis.
    (3) Perirenal abscess.
  C. Whole tract infections.

TABLE 1.

Food Material Which Gives an Excess of Acid in the Urine:

Bacon, smoked 0.8	Buckwheat flour 2.0	Lamb, breast 3.3	Rice 2.7
Barley, pearled 2.9	Butter fish 5.2	chops, broiled 3.0	Rice flour 2.7
Beef, brisket, medium fat 2.4	Catfish 3.0	fore quarter 3.0	Salmon, fresh 5.4
chuck, average 3.8	Chicken, broilers 10.0	hind quarter 3.9	canned 5.5
corned 2.6	Cod, dressed 12.0	leg, medium fat 4.2	Sausage, bologna 4.0
cross ribs, average 2.5	salted 12.1	loin 2.8	frankfort 3.9
dried, salted, smoked 8.3	Corn, green 1.8	neck 3.0	summer 2.5
flank, lean 5.6	Corn meal 1.5	shoulder 2.6	Sardines 4.2
fore quarter, lean 5.1	Crackers, soda 2.0	side 3.1	Shad 5.8
fore shank, lean 7.7	Eggs, whole 7.5	tongue 3.2	Shredded wheat 3.3
heart 3.2	white 9.5	Lard *	Smelt 10.1
hind quarter, lean 5.0	yolk 7.0	Lentils 1.5	Sturgeon, anterior sections 10.0
hind shank, lean 8.2	Eels, dressed 6.0	Mackerel, fresh 6.7	Trout, salmon 5.4
hind shank, fat 4.0	Flounder (entrails removed) 11.3	salt 2.8	Turkey 3.6
juice 9.8	Flour, wheat, entire 3.3	salt, canned 6.2	Veal, breast, lean 6.7
kidney 7.4	wheat, patent 2.7	Mutton, chuck 2.0	breast, medium fat 4.8
liver 7.9	wheat, straight 2.7	flank, medium fat 2.0	chuck, lean 10.3
loin 5.8	wheat, average high and medium grades 2.7	fore quarter 2.5	chuck, medium fat 7.1
neck, lean 6.6	Fowl 4.6	hind quarter 2.5	flank, medium fat 5.8
neck, medium fat 4.3	Frog's legs 12.1	hind leg, lean 5.0	kidney 6.7
plate, lean 3.3	Goose, young 2.0	hind leg, medium fat 4.0	leg, lean 8.7
porterhouse steak 4.0	Haddock (entrails removed) 12.0	loin, medium fat 2.2	leg, medium fat 6.2
rib rolls, lean 5.7	Haddock, smoked 12.2	neck, medium fat 3.0	liver 7.6
ribs, lean 5.2	Halibut, smoked 4.7	shoulder, medium fat 3.5	loin, lean 7.7
ribs, fat 1.9	Halibut, steaks 7.8	side 2.5	loin, medium fat 5.6
roast 3.4	Ham, fresh lean 5.5	Oat meal, rolled oats 3.0	neck 7.1
round, lean 6.8	medium fat 2.3	Oysters, fresh, solids 30.0	rib, medium fat 7.5
round, free from visible fat 10.0	smoked, lean 3.7	Peanuts .7	rump 4.4
rump, lean 5.0	smoked, medium fat 2.0	Perch 11.1	shank, fore 7.9
rump, fat 2.1	boneless 2.3	Porgy, whole 7.8	shank, hind 8.3
sides, lean 4.9	deviled 2.5	Pork, loin chops, lean 4.0	shoulder, lean 8.3
shoulder and clod lean 7.8	Herring, smoked 6.3	loin chops, medium fat 2.5	shoulder, medium fat 4.7
shoulder and clod, medium fat 5.4	whole 6.8	fat, salt 0.1	Walnuts, California 1.1
sirloin 3.9		side, not lard and kidney 0.8	Weak fish 9.6
Black fish 10.8		shoulder, smoked 2.2	Wheat, cracked 3.3
Blue fish 11.0		sausage 1.4	White fish 7.6
Bread, white, average 2.7		tenderloin 4.9	
whole wheat 3.0			

Food Material Which Gives an Excess of Base in the Urine:

Almonds 1.8	Cheese, Cheddar 1.2	Lettuce 38.6	Pears, canned 1.5
Apples, fresh 6.0	Cherries, fresh 7.8	Marmalade, orange 1.0	dried 1.5
Apricots, fresh 11.0	Chestnuts, dried 3.2	Milk, condensed sweetened 1.4	green 1.2
Asparagus, fresh 3.6	fresh 3.1	condensed, unsweetened 2.7	Pineapple, fresh 15.7
Bananas 5.6	Citron 3.0	skimmed 5.0	Plums 7.3
Beans, baked, canned (5)	Cocoa 1.0	whole 2.6	Potatoes 8.6
dried 5.0	Cocoanuts 1.2	Molasses 20.8	Potato chips 3.9
lima, canned 12.0	Cranberries 3.7	Mushrooms 8.9	Potatoes, sweet 5.4
fresh 11.5	Cream, 18.5% fat .3	Muskmelons 19.0	Prunes, dried 8.0
dried 12.0	40% fat .1	Olives 18.8	Pumpkins 5.7
string, canned 13.0	Cucumbers, fresh 45.5	Onions 3.1	Radishes 9.8
string, fresh 13.0	Currants, dried (Zante) 1.8	Oranges 11.0	Raisins 6.8
kidney, canned 2.5	Dates 3.2	Orange juice 14.4	Raspberry juice 13.0
kidney, dried 2.5	Figs, dried 32.3	Parsnips 18.2	Rhubarb 37.0
Beets, fresh 23.6	Grapes 2.8	Peaches, canned 10.0	Spinach 113.0
Buttermilk 6.1	Grape juice 4.0	fresh 12.2	Squash 6.1
Cabbage 18.0	Koumiss 2.9	Pears, fresh 5.6	Tomatoes, fresh 24.5
Carrots 24.0	Lemons 12.0	canned 2.3	Turnips 7.0
Cauliflower 17.4	Lemon juice 11.0		Watermelons 8.8
Celery 42.2			

* Amounts assumed to be negligible.

2. *The Clinical Application.*—The clinical application of internal antiseptics in the treatment of pyogenic infection is: (1) Prophylactic; (2) palliative; (3) therapeutic.

It is important to have one of the above purposes as the reason for internal medication, and not to give antiseptics just because pyuria exists. It is well to remember that a cure by the use of internal urinary antiseptics alone is the exception. Most of the cases of pyuria apparently so cured probably would clear up without them. The use of urinary antiseptics is predominantly for prophylaxis and palliation. They are an accessory, sometimes of great value, but nevertheless an accessory in the treatment of the great majority of urinary infections. Infections of the lower urinary tract are almost always secondary to some other condition, as also are the majority of infections of the upper urinary tract. Antiseptics are useful for prophylaxis preliminary to instrumentation and surgery of uninfected patients, and for palliation in the course of study and treatment of the infections which may clear up following their use only to recur later on. In order to get

the best results with urinary antiseptics, in addition to the foregoing basis of use which has to be correlated with the diagnosis, there are three factors of importance:

1. The reaction and the output of urine.
2. The invading organism.
3. The individual tolerance.

Some antiseptics act best or only in an acid urine (hexamethylenamin), others in an alkaline urine (acriflavin). The effect of some is enhanced by limitation of fluids (hexylresorcinol), although a large fluid intake is beneficial in most infections and of insignificant influence on the action of other antiseptics. Some are more effective against cocci (methylene blue) than against bacilli. Some upset certain patients who can tolerate others.

3. *The Relative Effectiveness.*—From the foregoing it is apparent that a comparison of urinary antiseptics in a brief discussion can be general only. For most purposes three antiseptics suffice, namely, hexamethylenamin (hexamin, urotropin), acriflavin and methylene blue. I would place their relative usefulness in the order given; but their relative effectiveness will vary markedly with conditions, which have been indicated.

Hexamethylenamin is useless in a urine which cannot be kept well on the acid side, and the lower the pH the more effective will it be because of the maximum yield of formaldehyd then. An efficient acidifier of the urine is an absolute necessity in conjunction with hexamin therapy. Shifting the pH from alkaline (by giving citrates and bicarbonates) to acid (by giving acid sodium phosphate, ammonium chlorid and ammonium acid phosphate) has been regarded in itself as an effective bactericide, but is by no means as efficient as when used in conjunction with hexamin during the acid period and acriflavin during the alkaline period. The ketogenic diet* likewise is regarded as more efficient when ketones are present in the urine than when the pH alone is low. A diet composed mostly of foods in which acid predominates, or the alkalies are low (Table 1), may be useful occasionally with hexamin. A strict ketogenic diet is both difficult and disagreeable, besides requiring persistent use for a long time to be effective. Hexamin may be effective intravenously when it cannot be given by mouth for some reason. It is indicated and useful in this way—for example, in patients who undergo uretero-intestinal implantation as prophylaxis against ascending infections.

Acriflavin (grains one-half to two, three times a day) seems to act best in an alkaline urine. It should not be given for any prolonged period. It is effective oftenest in pyurias with colon bacilli associated with abnormalities of the lower tract.

The effectiveness of methylene blue (grains one to two, three times a day) is influenced very little by urinary reaction. Its chief usefulness is in coccal infections of the lower tract. It may be highly efficient in gonorrheal infections of the lower urinary tract (urethrocystitis) of women.

Other urinary antiseptics are indicated mainly when hexamin is not tolerated well or the urine cannot be rendered acid. The occasional patient, for these reasons, mostly in the group of infections of the lower tract such as the prostatic with cystitis, will do better on hexylresorcinol. Rarely will an arsenical (arsphenamin) be indicated intravenously for coccal infections.

In conclusion, it may be said that the use of the urinary antiseptics which are now available requires judgment, based on the careful consideration of the conditions for which they are to be used, as well as of all factors influencing their action, in order to secure any degree of effectiveness. At best their use is prophylactic and palliative. Rarely will they be curative.

* Barborka, C. J.: Ketogenic Diet and Its Use, 8:471-481, 1933.

For other comments on Ketogenic diet, see page 358.

Deaths in California in 1932. — A total of 67,622 deaths was registered in California in 1932. Data for deaths in 1933 are not available at the present time. Seventy-five per cent of all deaths in California during 1932 were due to the following seven causes: diseases of the heart and circulatory system, cancer, nervous system, external causes except suicide, tuberculosis, nephritis, and pneumonia. In 1932 there were 17,681 deaths due to diseases of the heart and circulatory system. This constitutes 26.1 per cent of the total number of deaths that occurred in the state. Cancer caused 11 per cent of the total deaths, diseases of the nervous system 9.5 per cent, external causes except suicide 8.1 per cent, tuberculosis (all forms) 7.4 per cent, nephritis 7.3 per cent, pneumonia 5.6 per cent.

Following are the numbers of deaths in California in 1932, according to principal causes:

Circulatory system	17,681
Cancer	7,451
Diseases of the nervous system	6,387
External causes, except suicide	5,523
Tuberculosis, all forms	5,020
Nephritis	4,993
Pneumonia	3,973
Digestive system (except diarrhea) (under two—over two)	3,474
Epidemic diseases (except tuberculosis)	2,926
Other general diseases	2,862
Early infancy	1,872
Suicide	1,709
Nonvenereal genito-urinary	885
Respiratory system (except pneumonia and tuberculosis)	729
Diarrhea and enteritis (under two)	511
Congenital malformations	495
Puerperal state	448
Diarrhea and enteritis (over two)	206
Senility	201
Diseases, skin and cellular tissue	130
Ill-defined and unknown	79
Diseases of bones and organs of locomotion	67

There were 2,926 deaths from epidemic diseases, not including tuberculosis. This constituted 4.3 per cent of the total deaths that occurred in California in 1932. Influenza caused more deaths than any other disease in this group. Following are the numbers of deaths from each of the epidemic diseases in 1932:

Typhoid	83
Malaria	5
Smallpox	1
Measles	55
Scarlet fever	54
Whooping-cough	177
Diphtheria	207
Influenza	1,137
Dysentery	76
Acute poliomyelitis	31
Lethargic encephalitis	38
Meningococcus meningitis	86
Venereal diseases	729
Other epidemic diseases	247

California and Western Medicine

Official Organ of the California and Nevada Medical Associations

Owned and Published by the

CALIFORNIA MEDICAL ASSOCIATION

FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO

Telephone Douglas 0062

Address editorial communications to Dr. George H. Kress as per above address; advertising and business communications to the Secretary-Treasurer, Dr. Frederick C. Warnshuis, also at the above address.

EDITOR . . . . . GEORGE H. KRESS

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

BUSINESS MANAGER . FREDERICK C. WARNSHUIS

Advertising Representative for Northern California
L. J. FLYNN, 544 Market Street, San Francisco (DO 0577)

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Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

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Leaflet Regarding Rules of Publication.— California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS*

INITIATIVES 9 (CHIROPRACTIC) AND 17 (NATUROPATHIC)

Before this November issue of CALIFORNIA AND WESTERN MEDICINE finds its place in the mails, the electorate of the State of California will have gone to the polls and given its verdict on two proposed laws—Initiative 9 (Chiropractic) and Initiative 17 (Naturopathic). The official journal of non-sectarian, scientific medicine in California can only express the hope that, by a large and decisive vote, the citizens of the Golden State will have rejected these two initiatives. If, however, as with other movements in these troublous times, the verdict of the people shall prove to have been otherwise, it will then become the duty of organized medicine to decide what policies should be adopted, both for the present and also, in so far as possible, for the future.

It is sincerely to be wished for that each and every member of the California Medical Association was alert to his responsibilities, and that all did their utmost in promoting the efforts to safeguard the citizens of the State from laws which, no matter how high-sounding in words, if enacted would bring about retrogression in healing-art standards and practice; with saddest results, however, not to the medical profession, but to the lay public itself.

To all who lent a hand in the campaign just closed, the thanks, not only of the California Medical Association, but of scientific and non-sectarian medicine-at-large. So much, for the present, on this subject.

A DUTY OF VITAL IMPORTANCE TO EVERY MEMBER OF THE CALIFORNIA MEDICAL ASSOCIATION

At this year's annual session of the California Medical Association at Riverside, the House of Delegates (after serious discussion, which lasted into the morning hours) voted that a sickness survey in California should be made, and approved the plan for a Committee of Five to supervise the study.

That committee has been hard at work, but finds lack of coöperation on the part of many members of the medical profession.

Questionnaires of an impersonal and confidential character have been sent to the licensed physicians of California, but to date, only about 10 per cent have sent in their replies!

To be of real factual value, such a study of medical economics in California must call for replies to a total of about 80 per cent and, as already stated, up to the present time only 10 per cent of the answers required have been received by the committee.

In short, at this date (only two months before the day when the 1935 California legislature will convene to hear the report of its own Senate Interim Committee) we ourselves—that is, nine out of every ten of us—are so grossly negligent that unless we give more evidence of coöperation it will be impossible to compile a report of the kind we have demanded; and through such non-coöperation we will throw away practically the thousands of dollars which it has thus far been necessary to lay out in order to create the groundwork for an accurate and comprehensive report.

These words are written at the request of the Committee of Five on Survey, which is *your committee,* and which *you* have created to take charge of this work. We regret that we must seem to chide, but the issues at stake are so important that, on behalf of the Committee and also the Officers of our Association, we appeal to every member who has not sent in his questionnaire blank to fill out the blank immediately and give the matter his earliest, proper attention.

Here in California we must be true to the faith and carry our respective shares of mutual burdens. Failure in this effort to make a real survey for California would give others the right to call us "An Organization of Non-coöperators." We know that we do not deserve such an appellation, and if in this each member of the California Medical Association will only do his bit, there will be no need of remorse later on.

In conclusion: please fill in your Questionnaire and send it at once to the Committee of Five!!

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

SHOULD CALIFORNIA HAVE A QUALIFYING CERTIFICATE FOR THE LEARNED PROFESSIONS?

What Is a "Qualifying Certificate" Law?—A qualifying certificate law for professions, such as the healing art, dentistry and pharmacy, may be said to be a commonwealth's expression of intention to demand of all those who aspire to enter such professions, that, prior to admission into their respective schools of learning, they shall give evidence of adequate knowledge of certain basic or fundamental subjects upon which their later professional training is to be built.

* * *

The Police Jurisdiction of a State Permits the Enactment of Such a Law.—The right to pass such a law rests upon the police authority vested in each commonwealth by our Federal Government. Such police authority is so granted in order to permit the States of the Union to enact legislation that will make for the welfare and happiness of their citizens. The protection of human health and life has long been construed to be a fundamental obligation of all governments; and public health acts, medical practice and similar laws are held to be proper and legal police measures to attain such conservation.

* * *

Why a National Medical Practice Act Is Impossible.—In the United States the Federal Government recognizes the principles of State rights, and permits each of its federal units or commonwealths to be supreme in carrying out its police obligations within its own geographical confines, reserving, for federal intervention or authority, those conditions having to do with interstate or international policy. That is why, for instance, each State enacts its own Medical Practice Act or acts, and why, also, there are almost as many varieties of medical practice acts as States in the Union; and it explains, likewise, why a national medical practice law cannot come into existence through obligatory legislation upon all the States in the passage of such a law by the Congress at Washington.

* * *

Explanation of Reasons for Existence of Different Kinds of Healing-Art Schools.—The reasons for the existence of divergent and antagonistic schools of the healing art is easily understood when the history of that practice and the psychologic background of human beings are taken into consideration. For human minds grasp at different remedial agencies for physical and mental ills as willingly as they seize upon a multitude of sects and church agencies to minister to their spiritual welfare. This may be unfortunate, but facts are facts, and must be accepted as such.

* * *

Citizens Have the Right to Choose Their Medical Advisers, but Latter Should Be Adequately Trained.—The right of citizens to hold different views on methods of healing, and to choose the healing-art advisers they prefer is conceded; provided that practitioners who are legally recognized and sanctioned shall possess qualifications indicating that their methods of practice will not be inimical to the welfare of the persons who call upon them for advice and aid, or to citizens-at-large.

* * *

The Justification for a Qualifying Certificate Law.—It is on these grounds that the need and justification of a "qualifying certificate" law becomes manifest. It demands no great amount of book-learning to enable any person to realize that if an automobile, which is made out of permanent and non-changing parts, is a very intricate piece of mechanism, then the human body, with its ever-changing component biologic elements, must be vastly more so; and that to understand the structure and function of the living human body necessitates a very considerable amount of both preliminary or general, as well as technical or professional, education and training.

* * *

Citizens Want Their Healing-Art Practitioners to Be Well Trained.—Citizens in all walks of life prefer that their practitioners of the healing art (whether non-sectarian or sectarian practitioners makes no difference) shall be intelligent persons who have been adequately educated and trained. The public school system is so thoroughly a part of American life that in the United States a high-school course is no longer looked upon as an extraordinary but, rather, as an ordinary amount of basic general education. Almost all citizens agree that, at the very least, a high-school general training should be possessed by all types of healing-art practitioners. And few citizens would raise vigorous objections if one year of collegiate schooling were demanded by law before an individual should be permitted to enter upon his course of professional training in a healing-art school.

* * *

Qualifying Certificates Should Demand One Year of College Training.—The one year of college work requirement is the standard suggested in a draft of a qualifying certificate law which has been prepared for the Council of the California Medical Association by the special committee which it appointed several years ago, and which has been studying and reporting thereon. (For list of report references and comments, see California and Western Medicine for March, 1934, page 211, April, page 302, and June, page 436.) At the Los Angeles meeting of the Council held on October 6, at which the special committee's draft of a qualifying certificate law was presented, the committee was instructed to proceed further with its studies and report a revised draft.

* * *

Some Basic Provisions in the Proposed Qualifying Certificate Law.—For the information of members of the Association, and in the hope of securing suggestions thereon, some of the basic provisions of the proposed law are here enumerated:

All persons who would matriculate in a healing-art school of any kind must, prior to such matriculation, possess a "qualifying certificate," granted after examination by the California Board of Qualifying Certificate Examiners.

To secure a qualifying certificate, the applicant must satisfactorily pass an examination in five subjects, to be chosen from a group of eight; namely, English, chemistry, physics, botany, zoology, biology, anatomy, physiology.

The amount of knowledge required in the five subjects chosen by the applicant must be of the standard demanded of students who have completed freshman-year studies in the University of California. (The acquisition of this knowledge can be in any school or college, or under private or other instruction, but the standard demanded must be equivalent to that referred to as exacted by the State University.)

The Qualifying Certificate Board shall consist of five members, one each from the following institutions: University of California, Stanford University, University of Southern California, Santa Clara University, and California Institute of Technology. (No Board member shall be on the faculty of a healing-art school.)

The members of the Qualifying Certificate Board shall be appointed for five-year terms from the above-named institutions, one term expiring each year; the appointments to be made by the Regents of the University of California, of which body the Governor of California is the chairman.

* * *

The Advantages of the Above Provisions.—A consideration of the foregoing makes evident that in such a proposed plan provision is made:

For a nonpartisan, nonsectarian, nonhealing-art board of highest scholastic attainment and reputation, and one free from all political influences; and

For an examination in basic cultural and scientific subjects; the applicant to have considerable latitude in his choice of five out of eight subjects; the standard for scholastic attainment being that which is assumed to be possessed at the end of the freshman year at the State University or its equivalent.

At this time it is not possible to go further into detail concerning the proposed qualifying certificate law, but in due course other comment will be made. The law would seem to fulfill all the purposes of "basic science" enactments, such as exist in several States, with the advantage that controversial subjects like bacteriology, hygiene, pathology, would not come before the people when the measure was presented for adoption—a something to be decidedly reckoned with in California.

* * *

The Subject Is Worthy of Earnest Study.—In conclusion, it may be stated that if such a qualifying certificate law, in years gone by, had been made a part of the California statute books by initiative vote of the people, the placement of Initiatives 9 (Chiropractic) and 17 (Naturopathic) on the November 6, 1934, ballot might have been rendered impossible. However, be that as it may, the subject of a qualifying certificate law is one that is worthy of the serious attention of professions such as medicine, dentistry, and pharmacy. Let there be discussion thereon, and then the light will follow.

SECRETARY WARNSHUIS' SALUTATION

In the California Medical Association department of this issue of California and Western Medicine (printed on page 344), Secretary Frederick C. Warnshuis calls the attention of members to comments, official and unofficial, which he will contribute to that column, on the current work of our Association. The California Medical Association Council joins with him in his cordial invitation to all members for fullest coöperation with the Association's central office. Doctor Warnshuis will also send to every county society secretary a "month-by-month" letter dealing with matters of special interest and importance. In the official journal, too, items on the activities of State and component county societies will be taken up so that both officers and members may be kept in touch with the work in hand.

By the time this November issue reaches its readers many members will have had an opportunity to meet personally the new Secretary of the Association, and it is hoped that such contacts, promoting the utmost frankness and cordiality, will make easier a utilization of the services of the administrative offices. As before stated, the Council joins with Doctor Warnshuis in his invitation for fullest coöperation. The officers of the California Medical Association desire to understand the problems of component county societies, and at the same time wish to have members everywhere know what is being done at the central headquarters. The Association Secretary is an important factor in effecting good understanding, and by everyone so working with him, much may be accomplished for organized medicine.

THE CORONER'S OFFICE, OR THE MEDICAL EXAMINER SYSTEM—WHICH?

At the Century of Progress Fair, one of the exhibits in the Hall of Science was presented by the Institute of Medicine of Chicago. The description of this exhibit and the text of a very illuminating leaflet handed to visitors are printed on page 356 of this issue.

A perusal of the facts set forth therein is very enlightening. One of the parallel columns depicts a coroner's department as conducted by an unqualified personnel holding office by virtue of the antiquated political heritage, while the other column notes a contrasting efficiency in the investigation of deaths having medico-legal aspects when such inquiries are conducted under the "Medical Examiner System."

The facts, as so printed, readily suggest to members of the medical profession their own answers, and with proper educational work could be made equally understandable and appealing to lay citizens, who, in the last analysis, will determine whether an almost medieval coroner's system shall continue or be supplanted by methods more in harmony with present-day knowledge and civilization.

In the not far-distant future, the old coroner's set-up—as part of an obsolete political system that is altogether out of touch with modern outlooks—must and will be given up. The pity of it is, that the change will probably not come without a severe political struggle. In Europe and some portions of the United States, the medical examiner system is in full operation. If the medical and legal professions would unite in a campaign of education for the lay public, only a few years would be necessary to witness the downfall of the old-fashioned, inadequate coroner's departments (as they now exist, for instance, in California) in favor of a system of scientific medical examiners. The suggestion is here made that component county societies might find this an interesting topic of discussion at joint meetings held with members of the legal profession. A beginning must always be made when such reforms are in mind; why not, therefore, during the coming year let the study of the coroner's office and operations be one of the topics for discussion in county societies?

INITIATIVES 9 AND 17 DEFEATED

As this last November form is about to be printed, the November 6 election returns indicate the defeat of the Chiropractic and Naturopathic initiatives. Congratulations to the citizens of California for this defense of public health and of professional standards. For further comments, see December issue.

EDITORIAL COMMENT*

SYNERGISTIC ANAPHYLAXIS

Ten years ago it was noted by Dr. G. Sanarelli,[1] director of the Hygienic Institute, University of Rome, that if normal adult rabbits are injected intravenously with sublethal doses of cholera bacilli, the injected bacilli often localize in the intestinal mucosa. The blood stream, and most of the extra-enteric tissues, soon become free from the injected micro-organisms. If the resultant enteric carriers of cholera bacilli are injected intravenously, about twenty-four hours later, with presumably subtoxic doses of B. coli or B. proteus filtrate, violent systemic shock often occurs. This heterophile or synergistic shock may cause death within a few hours, with symptoms resembling lethal anaphylaxis. With intravenous injection of smaller doses of the same heterophile bacterial filtrates, however, this systemic shock is not noted. A local enteric allergy or non-specific Arthus phenomenon, however, is demonstrable, a hemorrhagic or desquamating enteritis, producing symptoms simulating those of human cholera. Sanarelli referred to this local synergistic enteritis as an "epithelial shock," for which he coined the word "epithalaxie."

That the Sanarelli heterophile Arthus phenomenon may also occur in extra-enteric tissues has been abundantly demonstrated by Shwartzman,[2] Hanger,[3] Sickles,[4] and others. These investigators found that a wide range of mildly toxic antigens, such as B. typhosus filtrate or eel serum, will render local skin areas hypersensitive to heterophile factors. Violent hemorrhagic reactions may occur in the prepared skin areas on the intravenous injection of such substances as alien bacterial filtrate, dilute agar, gelatin, india ink, or galactose. In their latest study of the Sanarelli reaction, Freund and Smith[5] report hemorrhagic necrosis of prepared skin areas following intravenous injection of soluble starch. This local starch reaction is often accompanied by severe systemic shock, the physiological mechanism of which has not yet been determined.

It is conceivable that the Sanarelli synergistic allergic syndrome has a wide application to the symptomatology of infectious diseases. It suggests, for example, that certain forms of arthritis, otitis media, and catarrhal conditions of the upper respiratory tract may be of composite etiology, caused by a local deposit of subpathogenic micro-organisms, aggravated by subtoxic factors of enteric origin. Hanger,[3] for example, found that rabbits suffering from certain symptom-free upper respiratory infections often exhibit typical "snuffles" on the intravenous injection of B. coli filtrates. Toomey[6] has even suggested that the typical symptoms of poliomyelitis may be due to a local cord infection with a subpathogenic neurotrophic virus, "accentuated" by bacterial toxins of enteric origin.

Thus far, no adequate theory has been suggested to explain the Sanarelli heterophile allergic syndrome, which apparently is a summation phenomenon, beyond the range of conventional immune theory.

Stanford University.

W. H. Manwaring,
Palo Alto.

THE IMPORTANCE OF THE ANKLE JERK*

Although it is a firm neurological dictum that absent ankle jerks are of great significance, there are many in the field of general medicine who do not appreciate this significance, and so lose an important and easily obtainable bit of diagnostic evidence. Thus, those who test only the knee jerks may miss the clue to tabes dorsalis, a peripheral neuritis, or sciatic neuritis that an absent ankle jerk may furnish, since this is frequently found chronologically before any change in the patellar reflex. The reflex may also be absent in cord tumor, injury or congenital defect, and in combined sclerosis or poliomyelitis.

* This department of California and Western Medicine presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

1 Sanarelli, G.: Ann. Inst. Past., 38:11, 1924.

2 Shwartzman, G.: J. Exp. Med., 54:1, 1931; 56:291, 687, 1932; 57:857, 1933.

3 Hanger, F.: Proc. Soc. Exer, Biol. and Med., 25:775, 1928.

4 Sickles, G.: J. Immunol., 20:169, 1931.

5 Freund, J., and Smith, W. F., Jr.: Proc. Soc. Exper. Biol. and Med., 31:1104, 1934.

6 Toomey, J. A.: Proc. Soc. Exper. Biol. Med., 31:1015, 1934.

* From the Department of Medicine, Stanford University Medical School.

The neurological masters of a generation ago[1,2,3,6,7] noted that this reflex was only extraordinarily absent, and quote Ziehen,[4] who found that, although the ankle jerks were frequently absent in CNS syphilis, senile dementia, and chronic alcoholism, there were only ten instances in which they were missing in 1,500 cases of functional mental disease; and that of these ten, six had old fractures or other non-neurological complications, making the reflex impossible. Bramwell[5] found that although the ankle jerk was always present in health under the age of fifty, it was absent in 63 per cent of sixty-five cases where the patients ranged between seventy and eighty years. Oppenheim[3] apparently viewed this high rate of absence as unusual.

In one thousand consecutive patients in the Stanford University medical out-patient department, absent ankle reflexes were very uncommon when some care was taken to obtain relaxation and reinforcement. Having the patient kneel on a pillow in a chair, and squeeze the back of the chair on command, and then putting the Achilles tendon under slight tension by pressing lightly on the ball of the foot, were the maneuvers resorted to when the reflexes were sluggish. This procedure was frequently necessary in elderly persons whose reflexes are often not lively, and about whom in particular the legend has grown up that ankle jerks are unimportant.

Out of the one thousand patients examined, there were only forty who had absent ankle jerks, and of these one jerk only was absent in eleven cases. Of these forty cases the absent reflex formed a part of a demonstrated neurological picture in eighteen cases, and occurred in sciatic neuritis in two others, leaving only ten, or 1.0 per cent without explanation. In the age groups below forty years, the reflex was absent in nine definite neurological cases. In the age groups between forty and fifty years there were thirteen instances of absent ankle jerks out of 226 cases, an incidence of 5.7 per cent. Nine of these cases were tabes dorsalis. Between the years fifty and sixty, there were eight absent out of 144 cases, 5.5 per cent. Of these, four had tabes. Between the sixtieth and seventieth year there were seven absent out of 104 cases, 6.7 per cent, with only one definitely neurological, a case of diabetic neuritis. In the age group between seventy and eighty, where Bramwell[5] found 63 per cent of absent reflexes, there were only two absent in fifty-eight cases, or 3.4 per cent of absence. Thus, even in the older groups, absent ankle jerks were infrequent, although their significance was not as obvious as in the age groups where tabes dorsalis was common. It is possible that among these elderly patients, attacks of sciatica, radiculitis, neuritis, or even unrecognized poliomyelitis which had been long since forgotten, were really causal.

One may conclude that absent ankle jerks, even in the elderly, are definitely abnormal, although their cause may remain undiscovered. The diagnostic significance of this reflex warrants routine examination.

Stanford University.

Windsor Cutting,
San Francisco.

1 Dejerine, J.: Semiologie des Affections du Système Nerveux, p. 947. Paris. 1914.

2 Lewandowsky, M.: Handbuch der Neurologie—Allgemeine Neurologie, p. 602. Berlin, 1910.

3 Oppenheim, H.: Lehrbuch der Nervenkrankheiten, p. 12. Berlin, 1923.

4 Ziehen, T. H.: Zur diagnostischen Bedeutung des Achillessehnphänoms, D. m. W., 20:670, 1894.

5 Bramwell, E.: A Contribution to the Clinical Significance of the Tendo Achilles Jerk, Brain, 24:554, 1901.

6 Babinski, J.: Exposé des Travaux Scientifiques, p. 29. Paris. 1913.

7 Flatau, E.: Ueber das Fehlen des Achillesphänomen, Neurol. Centralblatt, 26:972, 1907.

ECONOMIC ADVANTAGES OF LOCAL ANESTHESIA IN HERNIA OPERATIONS

There is a general opinion that local anesthesia is not suited for inguinal hernia operations. I have used local anesthesia almost exclusively for hernia operations for twenty years. I do not advocate spinal anesthesia.

As there is no necessity for speed with the patient conscious and comfortable, only an intern assistant is needed. The expense of the anesthetist and the general anesthetic is saved. The cost of the local anesthetic for a double inguinal hernia operation is only a few cents.

The hospital stay after local anesthesia is several days less than following general anesthesia. Many of these local anesthesia patients go home on the eighth to tenth day, as there are no postoperative disturbances to weaken the sutured incision. The absence of bronchitis and pulmonary complications is of great economic importance.

Local Anesthesia.—To my mind, there is only one contraindication to local anesthesia in all forms of hernia, and that is in the case of the patient who does not want it, who, for any reason, prefers to be asleep during the operation. To this type of patient, for any operation, I always administer a general anesthetic.

Local anesthesia removes the danger from ether pneumonia and renal insufficiency. Every step in the operation that is carried out under general narcosis may be done with local. The operation for inguinal hernia is the most successful in the entire field of local analgesia. In strangulation, with the accompanying lowered vitality, it is a safeguard against shock; and it also provides ample time to determine the viability of the gut, and when resection is necessary, it can be done without additional risk.

The physician who would use local anesthesia should remember that the successful operation is painless. Patients frequently fall asleep during the latter part of a single or double hernia operation, especially when the sac is extensively adherent and the gentle dissection is necessarily slow.

Dangers of General Anesthesia. — While explosion of a general anesthetic is rare, the danger of such an accident must be thought of—the possibility of serious burns or instant death from

rupture of the lungs. There is also the risk of death from general anesthesia, as well as a chance that the patient may develop disease or disability as a remote result of general narcosis.

No general anesthetic is as safe as local. Not even the newer gas-oxygen-ethylene mixtures, in the hand of an expert, can equal the safety of local anesthesia.

The Advantages of Local Anesthesia.—It is surprising how many people are instinctively unafraid of local anesthesia because it permits them to be awake during the operation. Many patients will consent to operation under the local method who would not consider it if it involved a general anesthetic; this applies especially to those who have had a stormy and protracted convalescence after taking ether.

Extreme old age, organic disease of the heart, lungs and kidneys, were formerly believed to be contraindications to the radical operation. With a good technique, there is practically no contraindication to the cure of every hernia regardless of the age of the patient. Some of the best results in my private practice have been with patients over seventy years old. My oldest local anesthesia hernia patient was eighty-four; the youngest, five.

With local anesthesia there is no danger of postoperative dilatation of the stomach, tympanites, renal insufficiency, or heart and lung complications; there is no vomiting and straining to weaken the hernial incision; and there is no necessity to starve the patient before the operation—debilitated patients need never miss a meal, which is an important point for frail or aged subjects. In over seven hundred hernia operations under local anesthesia, I have not had a single death from the anesthetic, or a case of postoperative pneumonia.

727 West Seventh Street.

Leigh F. Watson,
Los Angeles.

NONSPECIFIC PROSTATITIS

Prostatitis is one of the common diseases most frequently misdiagnosed, because of the erroneous conception of its etiology and misinterpretation of the symptoms. While the majority of the general practitioners still consider gonorrhea and sexual irregularities as the only etiologic factors, very few of them are aware of the very existence of the so-called "nonspecific" prostatitis, and of the part played in its production by the focal infections (the sinuses, tonsils, teeth, colon, joints, tendons, and skin) as well as the more general, such as influenza, typhoid, measles, scarlet fever, pertussis, and others.

We are seeing an increasing number of men who have definite prostatitis without any antecedent gonorrheal history. The statistics of Von Lackum of the Mayo Clinic, in his group of secondary prostatitis, show that the predominant organism is streptococcus (35 per cent) and staphylococcus (22 per cent). Non-venereal infections of the prostate are very common, but generally receive very little consideration, because it is not generally known that various non-venereal organisms may easily find lodgment within the prostate. For instance, a man may contract a non-gonorrheal urethritis from his wife by contact during the menses: women who permit a profuse flora to develop in the vagina (from lack of personal hygiene) are apt to infect their husbands. Prostatitis may result from such non-gonorrheal infection of the urethra which may assume a course with but a few unpleasant symptoms. Auto-inoculation of the urethra, and eventually of the prostate, not infrequently occurs in men with long adherent prepuce; also in those who introduce objects within the urethra for onanistic purposes. Chemicals injected into the urethra for prophylactic purposes occasionally injure the canal, so that a nonspecific urethritis develops. Injury to the prostatic portion of the urethra, incident to cystoscopy, urethroscopy, catheterization, the passage of a urethral or ureteral stone, may so traumatize the tissues that infection ensues and invades the prostate. Cystitis secondary to pyelitis, ureteritis, urethral stricture or bladder stone is commonly the responsible factor for a "nonspecific prostatitis." Ulcerative colitis and rectal conditions, such as fissures, infected hemorrhoids, ischiorectal abscesses and proctitis, may give rise to *Bacterium coli* infection of the prostate gland, which is usually transmitted through the lymph system, whereas the urethral infections are carried into the prostate directly. General infections are transmitted to the prostate by the blood stream; for instance, in cases of prostatitis secondary to a carbuncle, influenza, typhoid fever, and so forth. Occasionally pathogenic protozoa (trichomonas, ameba) are found in the prostatic secretion.

No other gland in the male is as subject to infection as the prostate. Its secretions of albuminous and mucous substances constitute perfect culture media, and once an infection is established it is not easily attacked. Drainage of prostatic infection is very difficult, as the glandular portion of the prostate consists of numerous compound racemous glands, each group of which has a very narrow excretory duct, and stagnation of prostatic secretion within the alveoli is a common occurrence.

A peculiar point about nonspecific or secondary prostatitis is the frequent absence of characteristic genito-urinary symptoms which usually call the physician's attention to this organ. In these cases the prostate, though harboring focal infection, may be normal to the examining finger, but its secretion expressed by massage will be found to contain pus and bacteria. It is often necessary to repeat such examinations two or more times in order to express latent foci from the plugged-up acini, and to make the findings reliable. One should always consider the infected prostate as a possible cause of or contributing factor in the arthritic and neuralgic disturbances, and also in iritis and endocarditis.

1026 Story Building.

S. I. Movitt,
Los Angeles.

CALIFORNIA MEDICAL ASSOCIATION

FREDERICK C. WARNSHUIS, M. D., Associate Editor for California

This department contains official notices, reports of county society proceedings and other information having to do with the State Association and its component county societies. The copy for the department is edited by the State Association Secretary, to whom communications for this department should be sent. Rosters of State Association officers and committees and of component county societies and affiliated organizations, are printed in the front advertising section (Adv. pages 2, 4 and 6).

CALIFORNIA MEDICAL ASSOCIATION

CLARENCE G. TOLAND.....President
ROBERT A. PEERS.....President-Elect
FREDERICK C. WARNSHUIS.....
Secretary-Treasurer and Associate Editor for California

SALUTATION*

Your secretary-treasurer extends greetings to all of the members of the California Medical Association.

In assuming the duties and responsibilities of this office let it be clearly understood that my function and all my activities are to be those of an administrative officer, conforming at all times to the instructions and directions of the House of Delegates, the Council, and State officers. Your secretary-treasurer will earnestly endeavor to discharge his duties with that understanding and limitation. Your secretary has but one thought, purpose and desire and that is, to be of the greatest possible service to the Association, its constituent units and members, and thus further unity of action, mutual understanding, and accomplishment.

In close coöperation with the editor, it is purposed to impart through this department, each month, action that is recorded by your Council, Executive Committee, officers, and Association committees. The editor will continue to editorially discuss outstanding and important programs and problems related to organized medicine and medical practice.

Members are urged to read the contents of these departments to remain informed and to be guided by that which is imparted.

The secretary will welcome inquiries and suggestions from members. Whenever you feel assistance can be rendered to you, please command this office. Whenever you are in San Francisco it is hoped you will call.

Your secretary trusts and sincerely hopes that through mutual understanding and joint action the best interests of the Association and its members will be furthered. F. C. Warnshuis.

MONTH'S ACTIVITIES

Council meeting in Los Angeles October 6 and in San Francisco on October 14.

* * *

The Scientific Program Committee met in San Francisco on October 7. The general outline for the program for the 1935 annual session in Yosemite was formulated. Guest speakers were recommended to the Council. The committee will meet again on January 27 to complete the final program details.

* * *

Representatives of the Council visited Yosemite Park on October 5 to perfect local arrangements for the annual session May 13-16.

* * *

The Extension Lectures Committee met on October 9. The committee hopes to make an early announcement of a program of postgraduate lectures and conferences.

The Council and Association officers are engaged in conserving and enhancing the economic and professional interests of every member. Standing and special committees likewise devote time and effort in behalf of all members. Their activities and achievements will be further reaching and more effective if every member observes and conforms to the recommendations that are made and to the policies that are created. Unity of action on the part of members will produce results otherwise unattainable. California's medical profession should be united in action and purpose.

* * *

There is strength in numbers—possibly a trite statement still indisputable. Do you know an eligible fellow physician who is not a member? If so, tell him what benefits accrue to him by reason of affiliation. Invite him to accompany you to your next local meeting and invite him to sign a membership application. You will benefit by reason of results secured through a larger membership; the applicant will benefit by reason of his affiliation. Will you not make this personal effort?

* * *

Dr. W. C. Woodward, director of the American Medical Association Bureau of Legislation and Legal Medicine, spent from October 5 to the 15th in California. Doctor Woodward conferred with the Council, the officers of the Los Angeles and San Francisco County societies and addressed a few medical meetings in these two regions.

OFFICIAL NOTICE

Medical Economics Survey—Requires Your Coöperation*

October 20, 1934.

At its Riverside meeting last May, the House of Delegates of the California Medical Association appointed a Committee of Five for the Study of Medical Care, which included Drs. William R. Molony, Harry H. Wilson, Alson R. Kilgore, Robert A. Peers, and Rodney A. Yoell. During June and July the committee laid its general plans for the California Medical-Economic survey. On August 1 it appointed, as director of the survey, Paul A. Dodd, Ph.D., assistant professor of economics, and as consulting economist, Gordon S. Watkins, Ph.D., dean of the summer session and professor of economics, both of the University of California at Los Angeles.

The survey office in Beverly Hills was opened during August, and in the next few weeks Doctor Dodd and his staff, including a statistician, field director and supervisor, and office manager, began the work of organizing the extensive program of mailing and field investigation.

At this time, federal aid in the securing of field workers was petitioned and, through the whole-hearted coöperation of the State Department of Public Health, the project was approved for SERA assistance.

The plans of the survey call for a twofold study. The first, concerning the health and economic status of the general public, is to be conducted by field workers and will contact approximately one per cent

* Editor's Note—See also comments on page 340.

* Editor's Note—See also comments on page 338.

of the families in twenty-five different counties. The other aspect of the study involves an analysis of the medical and dental professions and of the hospital and public health facilities of California. This analysis is to be based upon several sets of questionnaires which are being mailed to every doctor, dentist, hospital and clinic in the State. The work is well under way at the present time. The field work will soon be in full swing throughout the State. It has been completed in two counties, and the office force is engaged in tabulating results. Mailing of questionnaires to physicians will have been completed this week.

All questionnaires to the doctors are to be held in strictest confidence and are to be returned unsigned. A reply card is to be mailed separately by the physician when he has returned the questionnaire, saying that he has done so.

It is to be urged again that, for the success of this project—initiated by the California Medical Association—we must have a questionnaire filled out by *every doctor*. Unless the members of the medical societies coöperate in this—their own project—the final report will be incomplete and may be biased. In a matter of this importance we feel that the entire profession must be enlisted in an attempt to solve its own problem in an intelligent and scientific manner. I am sure that further discussion is unnecessary.

In order that, through haste, oversight or individual hesitancy, some doctors shall not neglect their questionnaires, we are asking you, as president of your county medical society, to make a personal appeal to every doctor in your group by telephone, post card, or personal conversation. Will you please give this matter any attention that you can through any publication which you may have, and announce it at your next county meeting also.

Inasmuch as five thousand schedules have already been mailed and those remaining will be sent out this week, it is essential that any action on this matter be taken immediately.

It might be in order here to suggest that our field directors, Miss Ruth Hickox and Mr. F. H. Schroeder, within the next few weeks will be contacting the various medical societies in person in the organization of the actual field work in other counties throughout the State.

We wish to take the occasion of expressing our sincere appreciation for the personal appeals which you may make for us.

Yours very truly,

California Medical-Economic Survey.
Paul A. Dodd, Director.

Note.—Presidents and county secretaries are urged to present this request at your next meeting. Members are requested to return their questionnaire promptly.

COMPONENT COUNTY MEDICAL SOCIETIES

CONTRA COSTA COUNTY

The regular monthly meeting of the Contra Costa County Medical Society was held on Tuesday, October 9 at the Hotel Carquinez, Richmond.

President Stauffer turned the meeting over to Dr. Christopher Leggo of Crockett, who was chairman for the evening. Doctor Leggo introduced the first speaker, Dr. Frank S. Baxter of Oakland, who presented a concise and practical paper on *Common Eye Conditions* met by the general practitioner. This was followed by the second guest speaker, Dr. Hans Lisser of San Francisco. Doctor Lisser's paper on *Endocrinology* was exhaustive and instructive.

Application for membership was presented by Dr. John Blemer of Diablo, and read by the secretary. Motion was made and seconded and vote passed unanimously to accept Doctor Blemer into membership.

As the next meeting will be the customary November election of officers for the coming year, Doctor Stauffer appointed a Nominating Committee, consisting of Doctors Leggo, Weil, and J. B. Spalding. The November meeting will be a dinner meeting, to be held at the Hotel Carquinez, Richmond, on November 13 at 7:15 p. m. At this meeting the standing committees will make their annual reports, as will the secretary.

The meeting was adjourned by Doctor Stauffer at 11:30 p. m., and the usual buffet supper and pleasant social hour followed. The attendance was the largest of the year—forty-two.

Clara H. Spalding, *Secretary.*

HUMBOLDT COUNTY

The Humboldt County Medical Society met on the evening of September 19 at the General Hospital, with W. J. Quinn as chairman, O. R. Myers, president, presiding. Nineteen members and sixteen nurses were present.

An excellent lunch was served by the nurses and a very enjoyable evening resulted.

The paper of the evening was presented by Dr. Sterling Bunnell of San Francisco on *Treatment of Hip Fractures*. This subject was very well treated by Doctor Bunnell, and we all got a great deal out of it.

Lawrence A. Wing, *Secretary.*

MENDOCINO COUNTY

The Mendocino County Medical Society met on Wednesday, September 26, at the Windsor Hotel in Fort Bragg. A dinner was served at 7 p. m. Following there was a business meeting at the home of Dr. Royal Scudder. After this followed a round-table discussion on *Poliomyelitis*.

Rudolph B. Toller, *Secretary.*

MONTEREY COUNTY

The regular meeting of the Monterey County Medical Society was held on October 12 at the Jeffery Hotel in Salinas. Dinner was served at 7 p. m. in the clubroom of the hotel, eighteen members being present. Dr. Harry Lusignan of Monterey gave the principal address of the evening, his subject being *Appendicitis in Children*. Doctor Lusignan presented the subject in a very complete way, closing his talk by reviewing interesting case histories which illustrated the important points of the subject. Discussion was led by Doctor Garth Parker, who spoke of the surgical aspects, and Dr. Mast Wolfson, who called attention to the medical phases. President Dormody then gave a report on the meeting of the Public Health League of October 5. Drs. W. H. Bingaman, G. A. Starbird, and J. A. Merrill were appointed to see that the prepared talks against Amendments 9 and 17 were given in their respective towns. State health insurance plans were discussed, and Dr. Rollin Reeves was appointed to interview Senator Tickle regarding his attitude toward the medical profession.

William H. Lawler, *Secretary.*

ORANGE COUNTY

The September meeting of the Orange County Medical Association was held on September 4 in the Chapel of the Orange County Hospital. Donald H. Abbott, resident physician at the Orange County Hospital, was unanimously elected to membership in the local association.

The scientific papers of the evening were: *Branchial and Thyroglossal Cysts and Fistulae* by Conrad J. Baumgartner, and *Regional Anesthesia* by Charles F. McCuskey.

After brief discussion the meeting adjourned.

The October meeting was held on October 2 in the Chapel of the Orange County Hospital. Doctor Abbott made an announcement of the poliomyelitis situation at the County Hospital and announced suspension of clinics, quarantine against visitors, and no acceptance of patients except those of an emergency nature.

Doctor Newkirk brought up the matter of possibly decentralizing county indigents in some such plan as the San Fernando plan. After some discussion the suggestion was referred to the proper committee.

Dr. Ralph A. Duncan of Placentia and Dr. Fritz Held of Fullerton were elected to membership in the local association.

The meeting was also honored by the presence of Dr. Clarence C. Toland, our state president. He gave an excellent and authoritative discourse on the chiropractic and naturopathic initiatives which will come before the people, and outlined a number of ways to help combat these measures.

The attendance at this meeting was well over one hundred, and is perhaps the best turnout that we have had in the past year or two.

Waldo S. Wehrly, *Secretary.*

SAN BERNARDINO COUNTY

The annual meeting of the San Bernardino County Medical Society was held on Tuesday, October 2, at Mape's Cafeteria in San Bernardino.

Dinner was served at 7 p. m., sixty-nine members and guests being present.

A letter from Dr. Emma Pope, in regard to the recent limitations in malpractice insurance and the merits of the optional defense service available to members of the California Medical Association, was read. The membership application of Dr. John Burby was favorably voted upon.

Dr. C. G. Hilliard made a motion, seconded by Dr. Walter Pritchard, that the society extend a pressing invitation to the Southern California Medical Association to hold their annual spring meeting at the Arrowhead Springs Hotel. The motion passed.

The annual report of the secretary-treasurer followed. At Dr. C. G. Hilliard's suggestion the society gave Dr. E. J. Eytinge, the retiring secretary-treasurer, a standing vote of thanks for his fifteen years of untiring and successful service to the society.

Dr. W. D. Lenker raised the question of SERA families obtaining free medical care while the Government pays for all of their other needs and services. Doctor Lenker felt that the society should take a definite stand on this unfair discrimination against the medical profession. Considerable discussion followed and became so lengthy and pertinent that the president added Drs. J. N. Baylis, J. A. Graham, and W. D. Lenker to Dr. E. H. Hull's committee to investigate the matter. The president suggested that the next meeting of the society be devoted to the report of this committee and further general discussion.

Due to lack of time, the report of the Medical Advisory Board of the County Hospital was postponed until the next meeting.

Dr. William R. Molony, president of the State Board of Medical Examiners, gave the address of the evening.

A. E. Varden, *Secretary.*

SAN JOAQUIN COUNTY

The regular monthly meeting of the San Joaquin County Medical Society was held in the Medico-Dental clubrooms in Stockton on October 4.

Dr. P. B. Gallegos announced that on Tuesday, October 9, there would be a meeting of the Public Health League in the Medico-Dental Building clubrooms at 8 p. m. for permanent organization and election of officers.

The scientific program of the evening was given by Dr. David A. Wood of Stanford University, who presented a paper on *Some Interesting Tumors of the Endocrine Glands.* This paper was a very able presentation of an exceedingly difficult and technical subject. Doctor Wood presented several tumors with case history, the pathological specimen, photomicrographs, and x-rays, in such a manner that it was understandable to the society. The paper was discussed by Doctor Wycoff of Stanford, Doctors Ross, Chapman, Dozier, McCoskey, and P. B. Gallegos.

G. H. Rohrbacher, *Secretary.*

SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held on Monday evening, October 8, at the Bissell Auditorium of the Cottage Hospital, with President Markthaler presiding.

Doctor Shelton reported for the Community Service Bureau.

Doctor Moffat then introduced Dr. Norman J. Kilbourne of Los Angeles, who gave an extremely instructive talk on *Local Anesthetics Producing Prolonged Anesthesia for the Elimination of Pain After Rectal Operations.* This was discussed by Doctors Stone, Wilcox, and Thorner.

Doctor Woodward of the legal department of the American Medical Association was introduced by Doctor Ullmann, and spoke on *Malpractice Suits.* His talk was most instructive and much valuable information was given as to ways and means to avoid such suits. Discussion followed and questions were asked by Doctors Ullmann, Bakewell, Shelton, d'Alessio, Stevens, and Kluss.

The following applicants for membership in the society were balloted upon: Caleb S. Stone, R. W. Hunt, Lee H. Streaker, L. E. Heiges, Jr., and R. W. Lambuth, and all were unanimously elected into membership.

William H. Eaton, *Secretary.*

SONOMA COUNTY

The Sonoma County Medical Society held its regular meeting for the month of October at the Cotati Inn on October 11 at 7 p. m.

Twenty-four guests and members were present. Dr. Mark L. Lewis, Jr., past president, presided. A duck dinner was served, following which the regular business was conducted. Reports of committees were received and filed, bills presented and paid, announcements made, and the application of Dr. Bertha P. Baumbaugh of Santa Rosa for membership being favorably reported, she was unanimously elected to membership.

Dr. Frank A. Lowe, chief of the orthopedic section of the French Hospital staff, as guest speaker, gave a very instructive discourse upon *Injuries of the Knee Joint—Its Surgical and Postoperative Treatment,* which were illustrated by moving pictures, demonstrating the work being done by Doctor Lowe. Dr. Ethan H. Smith, orthopedist of San Francisco, senior associate with Doctor Lowe, was present as a visiting guest. He was called upon and gave interesting and instructive details of application of plaster casts and mechanical devices for the treatment of knee-joint troubles.

From every point, gastronomically, scientifically, and socially, the meeting was a success, as are all the meetings of the Sonoma County Medical Society.

W. C. Shipley, *Secretary.*

TULARE COUNTY

The first fall meeting of the Tulare County Medical Society was held at Motley's Café in Visalia on October 7. Dinner preceded the meeting.

Since our last meeting we have lost our president, Dr. Donald C. Fowler, by transfer to Marin County Medical Society, where he is now engaged in practice.

Dr. F. A. Lowe, orthopedic surgeon to the French Hospital, San Francisco, presented an interesting illustrated talk on *Fractures of the Neck of the Femur.*

KARL F. WEISS, *Secretary-Treasurer.*

VENTURA COUNTY

The regular monthly meeting of the Ventura County Medical Society was held at the County Clinic Building of the Ventura County Hospital on Tuesday, July 16.

Members present were: Doctors Mosher, Achenbach, Armitstead, W. S. Clark, Strong, Rich, Shore, and Krausher, Barker, Bradford, from the County Hospital.

In the absence of the president, the secretary introduced Dr. Elmer Belt of Los Angeles, the speaker for the evening.

Doctor Belt gave a most interesting talk on the seven stages of man from a urologist's viewpoint, taking up early congenital anomalies to carcinoma of the prostate. His talk was illustrated by lantern slides and pathological specimens.

* * *

The regular monthly meeting of the Ventura County Medical Society was held at the County Clinic Building of the Ventura County Hospital on Tuesday, September 11, Dr. Charles Smolt presiding.

Members present were: Doctors Mosher, Hendricks, Felberbaum, L. P. Smolt, Welch, D. G. Clark, Cody, W. S. Clark, and Shore.

There was no report of the condition in Fillmore concerning the care of indigents, as Dr. D. G. Clark, the only member of the committee present, said that the committee had not met.

Doctor Mosher, the program chairman, introduced Doctor Dysart of Pasadena, who gave a talk on *Mycosis in the Ear Canal.* A good discussion followed.

Dr. D. G. Clark of Santa Paula announced that October 7 was set tentatively for a barbecue given by the Billiwhack Dairy to the members of the society.

Doctor Felberbaum was named program chairman for November.

FRED A. SHORE, *Secretary-Treasurer.*

CHANGES IN MEMBERSHIP

New Members (39)

Alameda County.—William R. Boone, William D. Desch.

Contra Costa County.—John Blemer.

Los Angeles County.—Herman Abraham, Ben Nelson Anderson, Clyde R. Bennett, Harry H. Blond, John Wesley Budd, Frank G. Crandall, John G. Foster, Forrest E. Leffingwell,, Hugh M. Mason, Ralph W. Mather, C. Duane Miller, Ralph B. Miller, William L. Mortensen, Walter E. Nichols, Henry S. Penn, Lionel B. Saffro, Steele F. Stewart, Arthur S. Turkel, Henry J. Weedn.

Napa County.—Phillip Hunt Wells.

Orange County.—Ralph A. Duncan, Fritz Held.

San Diego County.—Asa Glenn Churchill, Frank R. Felt, William C. Newton, Delbert H. Werden, John W. Wilhoit.

San Francisco County.—Walter D. Birnbaum, Octave J. Bolognino, John A. Crowe, LeRoy Kyle Gay, John J. Miller, Jr., Martha James, Emmet L. Rixford, Jr., William C. Van Deventer.

Shasta County.—Curtis Manley Hanna.

Transferred (1)

Karl Fischel, from Los Angeles County to New York Medical Society.

Resigned (1)

Louis J. Regan, from Los Angeles County.

In Memoriam

Bell, Leo Pecci. Died at Sacramento, October 4, 1934, age 43. Graduate of Harvard University Medical School, Boston, 1915. Licensed in California in 1921. Doctor Bell was a member of the Sacramento Society for Medical Improvement, the California Medical Association, and the American Medical Association.

✝

Clymer, Henry Vance. Died at Fairfield, October 4, 1934, age 71. Graduate of Willamette University Medical Department, Salem, 1890. Licensed in California in 1897. Doctor Clymer was a member of the Solano County Medical Society, the California Medical Association, and the American Medical Association.

✝

Reinstein, Arthur Henry. Died at San Francisco, August 17, 1934, age 50. Graduate of Cooper Medical College, San Francisco, 1907, and licensed in California the same year. Doctor Reinstein was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Stillman, Stanley. Died at San Francisco, October 15, 1934, age 73. Graduate of Cooper Medical College, San Francisco, 1889, and licensed in California in 1890. Doctor Stillman was an honorary member of the San Francisco County Medical Society, the California Medical Association, and the American Medical Association.

✝

Strong, David Charles. Died at San Francisco, September 10, 1934, age 55. Graduate of University of Illinois College of Medicine, Chicago, 1902. Licensed in California in 1903. Doctor Strong was a member of the Mendocino County Medical Society, the California Medical Association, and the American Medical Association.

✝

Young, Phillip Gouvneur. Died at Sacramento, September 18, 1934, age 56. Graduate of Drake University College of Medicine, Des Moines, 1908. Licensed in California in 1914. Doctor Young was a member of the Sacramento Society for Medical Improvement, the California Medical Association, and a Fellow of the American Medical Association.

✝

Ziegelman, Edward Frank. Died at Chicago October 12, 1934, age 50. Graduate of Jefferson Medical College of Philadelphia, 1912. Licensed in California in 1927. Doctor Ziegelman was a member of the San Mateo County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

CANCER COMMISSION*

Malignant Tumors of the Gastro-Intestinal Tract

Report Submitted by Special Committee of the Cancer Commission of the California Medical Association

I

INTRODUCTION

Cancer of the stomach, in the majority of instances, is in a relatively late stage when seen at the operating table, where the only known cure—complete removal—can be given. The operative technique has apparently reached its development. The diagnosis of the lesion, is, however, generally made too late, due to the procrastination of the patient in seeking advice and to the tardy recognition by the physician of the true nature of the condition. These two delays are influenced, respectively, by lack of knowledge of the early danger signs, when present, on the part of the patient and the cursory examination and often incomplete study of the patient's complaint on the part of the physician.

This study is made, therefore, with two ideas in mind: (1) To formulate for the patient a brief comprehensive statement regarding the earlier signs and symptoms together with suggestions as to the course that should be followed in case of suspicion. (2) To coördinate in our own minds as physicians those signs and symptoms demanding investigation together with a summary of those procedures necessary for such investigations and a brief statement as to what experience has shown to be the methods of choice in treatment.

We believe that if the results of such a study can be carried, respectively, to prospective patients and to examining physicians, much will be accomplished toward seeing this disease in an earlier and more hopeful stage.

I. Tumors of the Stomach

A. RECOGNITION.

1. *What symptoms are suggestive of gastric malignancy?*

(a) Indigestion, in any person after the age of thirty-five, of a persisting or recurring nature, especially if characterized by a sense of fullness after eating; regurgitation of food, blood, or other fluid; loss of appetite and often dislike of meat.

(b) Loss of weight, strength, or both.

(c) Passage of tarry stools.

(d) A palpable tumor in the epigastrium or mid-upper abdomen.

(e) Dysphagia.

B. WHAT CONSTITUTES A PROPER INVESTIGATION?

1. A careful family history for possible tendency to malignancy, especially of the system under discussion.

2. A painstaking history of the present illness, especially with reference to any remote or recent digestive disturbance.

3. A thorough physical examination with special regard to visible waves or a palpable tumor in the epigastrium.

4. Competent roentgenographic study.

5. A complete blood count, stool examination for occult blood, and a gastric analysis.

6. In cases requiring differential diagnosis between ulcer and cancer, a three weeks' course of diet, rest and, if desired, alkali powders for observation as to symptomatic improvement with x-ray studies preceding and following this dietary period for ascertaining any objective improvement.

7. If doubt then exists, by all means direct examination at the operating table.

C. PERTINENT QUESTIONS.

1. *What physical findings are suggestive of gastric malignancy?*

(a) Unfortunately there may be none, even a coated tongue.

(b) A general loss of weight or of color.

(c) A palpable tumor in the upper mid-abdomen, especially if it moves with respiration.

2. *What laboratory aids are of value or of significance?*

(a) A lowered hemoglobin and red blood cell count.

(b) In a test-meal—achylia—especially if it fails to respond to histamin stimulation.

Fresh or even occult blood in gastric contents.

(c) Persisting occult blood in the stool on a controlled diet.

3. *Of what does a thorough investigation by means of the x-ray consist?*

(a) A study with the fluoroscope for:

(1) Any delay in emptying at six hours or longer.

(2) Any persisting niche or outpocketing filled with the opaque medium.

(3) Any filling defect.

(4) Any change in rugae formation.

(5) Presence, degree and continuity of peristaltic waves.

(6) Mobility of stomach.

(7) Study of the cardiac and fundic region with "head dependent" position.

(b) X-ray plates to show the outline of the stomach.

4. *Can a benign gastric ulcer and a malignant lesion always be differentiated? If not, what should be done?*

No, one cannot always make a certain diagnosis. The history of a complaint related to meals by time, relief by food or alkalies, acid regurgitation; a test-meal with a high hydrochloric acid content; and x-ray findings of an outpocketing defect, in contrast to a filling defect, point ordinarily to the diagnosis of ulcer.

Where doubt exists it is recommended that a three weeks' course of conservative treatment be instituted: diet, bed rest (if necessary, and it often is), frequent food, with or without alkali powders by mouth, and a repetition of the roentgenographic studies at the end of this period. If the lesion is a benign ulcer, the patient should have complete relief from all symptoms and should show improvement by the x-ray studies. If unrelieved and unimproved, a direct examination at the operating table should be made.

5. *What is the relationship of gastric ulcer to malignancy?*

This is a much debated question. Any direct relationship has never been proved. The knowledge that chronic irritation eventually is often the forerunner of cellular change in malignancy elsewhere, suggests the possibility of such relationship in these lesions. It is of interest that various authorities report, respectively, 18 to 50 per cent of histories indicative of previous gastric ulcer in patients suffering from gastric malignancy.

6. *When is surgery indicated in gastric malignancy?*

(a) Whenever there is a filling defect (protrusion into the lumen) in the lower half of the stomach with or without obstruction, especially if it is freely movable.

(b) Whenever, after proper investigation, there is doubt as to the nature of the defect.

(c) Whenever there is obstruction, even without mobility of the tumor.

7. *Can one be certain clinically as to the operability or inoperability of gastric malignancy?*

Operability depends upon the type, degree of malignancy and its location in the stomach. Ordinarily, the lesion with the less general reaction, of obstructive type and mobile character is more amenable to resection.

Malignancy of the cardiac end of the stomach is inoperable, as a rule.

* The Cancer Commission was brought into being by the House of Delegates of the California Medical Association to aid in the furtherance of all efforts to combat cancer. The roster of officers and the central office of the Commission to which communications may be sent is printed in this issue of CALIFORNIA AND WESTERN MEDICINE (see front cover directory). This is one of a series of reports by special committees of the California Medical Association.

One cannot always say clinically, however, with any assurance that a given gastric malignancy is inoperable. Therefore, whenever doubt exists the patient should be given the advantage of an exploratory operation.

An operable tumor, ideally, is one that, together with all of its lymph-node metastases, can be removed completely without unduly jeopardizing the life of the patient. There is an increasing tendency by surgeons of experience to recommend removal of a tumor, especially if it is of an obstructive or bleeding type, even if lymph-nodal metastases cannot be removed.

An inoperable tumor is one that is so fixed, by extension to neighboring organs, by too extensive involvement of the stomach itself, or by the presence of such widely scattered metastases as to make removal too dangerous to the patient's life or one that does not carry a prognosis of increased length of a satisfactory life.

8. *What surgical treatment is recommended.* (See Section D.)

(a) A partial gastric resection, including the tumor, by transverse section of the duodenum distally and gastric transections certainly not less than 2.5 centimeters proximally to the tumor is recommended (preferably not less than 4 centimeters). The use of the cautery in the transection does not offer any advantage of safety in regard to recurrence, but may be of other advantage. Any form of gastro-enterostomy possible and desired by the surgeon is satisfactory.

(b) A gastrojejunostomy, in instances of obstruction, is justifiable and indicated, for it may give comfort and prolong a worthwhile life for a period.

(c) A two-stage procedure, without or with exclusion of the tumor is recommended at times because of the patient's condition.

9. *Does radiotherapy possess merit in gastric malignancy?*

Radiotherapy, except in tumors of the lymphoma group, has not shown as yet any effects worthy of recommendation.

10. *Is a frozen section advisable when one is in doubt at the operating table as to the presence of malignancy?*

No. When in doubt and the lesion, from all aspects, is resectable, surgical excision should be performed.

D. Types of Gastric Malignancy and Recommended Treatment.

1. *Adenocarcinoma*—a large outgrowing tumor with fungating or polypoid body that often ulcerates in the center and frequently arises from a polyp. This type as a rule metastasizes late and infiltrates the gastric wall late and, therefore, is resectable with a prognosis of three to five years of comfortable and active life. Resection should be the treatment.

2. *Carcinoma, simplex*—a medullary and diffuse lesion, small to medium size, that often ulcerates, is frequently associated with hemorrhages, infiltrates the gastric walls, penetrates to neighboring organs, and metastasizes early. This tumor when possible should be resected even in the presence of apparently metastatic lymph nodes because of its ulcerative and hemorrhagic tendency.

3. *Gelatinous carcinoma*—a tumor that is similar in type to the true adenocarcinoma, except that it is more invasive of the gastric wall. Tendency to form much mucus and metastasizes late. This tumor should be resected with a margin of at least 2.5 centimeters (better 4 centimeters), even in the presence of enlarged apparently metastatic lymph nodes.

4. *Diffuse scirrhous carcinoma*—a type of cancer that involves all layers of the gastric wall, slowly invades and causes a thickening and contraction of the area involved. Other characteristics are: rare ulceration, visible and palpable nodules on a smooth glassy peritoneal coat and, as a rule, markedly enlarged lymph nodes. This type of tumor, in which metastases are more likely to occur than in the adenocarcinoma, is most frequently seen in the pyloric area. It should be resected when this is possible with a wide margin.

5. *Sclerosing fibrocarcinoma*—frequently known as linitis plastica, this may assume different forms, but in general is characterized by the diffuse fibrosis of all coats, the contraction of the stomach into a rigid tube and by late lymph nodal and distant metastases. This type of carcinoma may take years for complete involvement to the state of interference with function. Resection with proximal 4 centimeters (one and one-half inches) margin when possible is the wisest procedure.

6. *Lymphosarcoma*—as a rule, this is a bulky circumscribed growth with involvement of the gastric wall and adjacent lymph nodes. This is usually of smooth but nodular contour. It may ulcerate. It occurs, as a rule, in younger subjects. Diagnosis is established by microscopic section or by therapeutic test of radiation treatment. Metastases occur early and widely, preventing complete excision and, in any event, radiotherapy is the treatment of choice.

As malignant lymphoblastoma (lymphosarcoma) may present the same clinical and roentgenological picture as carcinoma, some members of the committee recommend that all patients on whom a diagnosis of gastric carcinoma has been made and on whom no laparotomy and *biopsy* to confirm the diagnosis has been made, be given one course of roentgen radiation at least as a therapeutic test.

SUMMARY

1. Any person thirty-five years of age, or over, suffering from any type of indigestion should be studied completely—family history, present illness, physical examination, gastric meal, stool and blood examinations, and x-ray examination.

2. Any person thirty-five years of age, or over, with a gastric lesion unrelieved by adequate diet and rest should have the advantage of surgical inspection and treatment.

(To be continued)

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

MRS. PHILIP SCHUYLER DOANE .....President
MRS. ELMER BELT.....Editor and Chairman of Publicity

State Auxiliary News

Santa Clara Auxiliary Organized.—The formation of an auxiliary in Santa Clara County, just announced by our president, Mrs. Philip Schuyler Doane, brings the twelfth unit into our state group. Under the leadership of Mrs. C. Kelly Canelo of San Jose as presiding officer and with an initial membership of nearly fifty, this new county in central California gives promise of becoming one of the most alert and helpful in the entire state.

* * *

Recent Appointments.—At the September meeting of the state board, held in Los Angeles, several appointments were announced. Mrs. Robert E. Gleason of Philo, Mendocino County, was named councilor for the ninth district. Mrs. Frank Edwin Coulter of Santa Ana was made state historian, a position for which she is eminently fitted by her long and devoted service in auxiliary work. Mrs. Coulter is a past president of both state and county, and her loyal interest in the auxiliary has never failed. To insure ample time for making the numerous arrangements necessary for a large convention, the president this year decided upon

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. Elmer A. Belt, chairman of the Publicity and Publications Committee, 2200 Live Oak Drive, Los Angeles. Brief reports of county auxiliary meetings will be welcomed by Mrs. Belt and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxiliary notes.

the early selection of the convention committee. Mrs. Frederick N. Scatena of Sacramento, state treasurer and member of the national board, was chosen chairman, to be assisted by her able townsmen, Mrs. Junius B. Harris and Mrs. J. Roy Jones. This combination should insure a perfect session at the meeting in Yosemite next May.

* * *

An Important Resolution.—For consideration by the county auxiliaries a resolution concerning a change in the time of their annual meeting and election of officers was adopted by the state board in September. While this is entirely optional with each county, it is a desirable change in the coördination of county and state work and it is hoped that it will be favorably received. The change of the annual meeting and election does not conflict with the state constitutional provision for the fiscal year, which may remain the same. Mrs. William H. Sargent, 109 Beechwood Drive, Oakland, state chairman of organization, may be consulted for any additional information desired. The resolution follows:

WHEREAS, At the present time the county auxiliaries hold their annual meeting and election of officers at different months of the year; and

WHEREAS, This procedure carries with it a great duplication of work for the state officers and a confusion of program; and

WHEREAS, In order to better synchronize and expedite the work between the state and county auxiliaries; be it

Resolved, That the state board in session in Los Angeles September 4, 1934, recommend to the county auxiliaries that their annual meeting and election of officers shall be held in the month of May.

* * *

News Notes of Officers.—Mrs. Philip Schuyler Doane, recently returned from a trip to the bay district, brings back with her the cheering news of the convalescence of our president-elect, Mrs. Thomas J. Clark of Oakland, who has been ill for several weeks. During her stay Mrs. Doane also met the national second vice-president, Mrs. Otis Floyd Lamson of Seattle, a delightful and dynamic person, who is in charge of the organization work of the medical auxiliaries in the eleven western states. In recognition of her exceptionally fine efforts in promoting *Hygeia,* Mrs. Mark Glaser, the Los Angeles County chairman, has been placed on the national committee and will have charge of *Hygeia* throughout the western states.

* * *

County Auxiliary Reports

Los Angeles County.—The last date on the county calendar of the Woman's Auxiliary before the summer vacation was an organization tea in Long Beach at the Pacific Coast Club, given by a most gracious hostess, Mrs. Walter H. Boyd. Its purpose was to bring together the eligible residents of the harbor district which includes Long Beach, San Pedro, and Wilmington. Distances within the county are great, and it has proved both pleasant and profitable for local groups to meet now and then. National, state and county officers were among the honor guests, and also the wives of both state and county medical association presidents, Mrs. Clarence Toland and Mrs. Philip Stephens. Greetings and short speeches were made by many of the officers, followed by excellent music and refreshments. The afternoon proved a great success, bringing in twenty-five members.

During the American Public Health Association convention in Pasadena the first week in September, Mrs. John V. Barrow, Los Angeles County president, and her board entertained two hundred of the visitors at a tea in her home, honoring Dr. Walter Bierring, president of the American Medical Association, and Dr. and Mrs. W. W. Bauer of Chicago. Doctor Bauer, who is director of the Bureau of Health and Public Instruction of the American Medical Association, spoke to the guests assembled in the garden. It was a privilege to hear him and to meet, as well, many of the other leaders prominent in medical and public health work throughout the country.

The regular September meeting on the 21st opened a new membership campaign with a garden tea in the Del Amo gardens. Each member was asked to bring with her an eligible guest, and seventeen new names were enrolled that afternoon. Mrs. Barrow welcomed each member and guest, and introduced the two speakers. Dr. Glenn Myers told of the possibilities of service and pleasures of friendships to be achieved through the auxiliary membership. Mrs. Stanley Cochems, executive secretary of the Los Angeles County Medical Association, outlined several bills menacing public safety, health and educational standards that are to be voted upon at the coming election and suggested ways in which the auxiliary could aid in their defeat. Tea served in the pergola, music, and the meeting of old friends and new, closed a pleasant afternoon.

MRS. ELMER BELT, *Corresponding Secretary.*

* * *

Orange County.—An interesting introduction to their year of study and social programs was afforded members of the Woman's Auxiliary to the Orange County Medical Association at their meeting in the home of Dr. and Mrs. J. I. Clark. Mrs. Clark was joined by Mesdames Harry G. Huffman, auxiliary president, Frank H. Patterson, R. P. Yeagle, and Miss Rosa Boyd in hospitalities of the afternoon. Miss Eloise Hafford, director of public education for the Ruth Home at El Monte, took as subject for her talk, *The Responsibility of Church and Community to the Adolescent Child.* Her long and varied experiences with underprivileged children gave her a wealth of material upon which to draw for her talk, which was both interesting and educational to her audience.

In the business session conducted by Mrs. Huffman, a reciprocity meeting was announced for November 6 in the Santa Ana Ebell Club House, where a program on medical legislation will feature Mr. Ben Read, executive secretary of the California Public Health League, as speaker. Auxiliary members heard with interest that their past president and past president of the state auxiliary, Mrs. F. E. Coulter, had been appointed historian of the state organization. During the social hour Mrs. G. Emmett Raitt and Mrs. John Wehrly presided at the beautifully appointed table where tea was served.

ELIZABETH M. SUTHERLAND, *Secretary.*

* * *

San Diego County.—At the September meeting the San Diego Auxiliary renewed its activities with enthusiastic plans for the fall. The first project is a membership drive, to be carried on for the remainder of the year. The president of the Public Health League sent a letter to the meeting expressing his sincere gratitude for the coöperation of the auxiliary prior to the primary election. Dr. W. W. Belford, the speaker of the day, discussed *Infantile Paralysis.*

Our members are looking forward to a bridge party to be held the afternoon of the October luncheon meeting, and to a dinner dance the Social Committee has scheduled for November.

ELIZABETH EAGER, *Secretary.*

* * *

Notes From the National Auxiliary Convention—A Brief Survey of Auxiliary Effort

In these notes, taken from reports sent to the twelfth national convention, are listed some of the high points of achievement and of interest during the year just passed in state auxiliaries throughout the nation. They tell a story of work well done in friendly coöperation, of an awareness of new duties in self-education, in guarding standards achieved, in sharing knowledge attained, and in aiding those less fortunate. They bring news of a great variety of effort and interest, and may suggest, perhaps, some ways of service that fit our own special needs.

In Alabama a health contest was sponsored in the elementary schools, and a silver cup awarded on "Child Health Day" to the school showing the greatest improvement among its pupils.

Arkansas reports the use of the American Medical Association study envelopes throughout the state by the Parent-Teacher associations, federated clubs, Red Cross workers, and other groups; also the sponsoring of clinics, the distributing of milk to indigent and tuberculous cases, and the conducting of a vacation school by one of the counties. With a *Hygeia* quota of seventy-five, they brought in 189 subscriptions.

California's contribution was the organization of a group representing the Sacramento Medical Society, the Department of Adult Education in the Sacramento schools, the Sacramento Health Department, the Red Cross, the Parent-Teacher Association, the American Legion, the University Women's Association, the State Board of Education, the Sacramento Auxiliary, and the State Auxiliary to work out a program of adult health education.

Colorado gave its annual donation of $100 to the Scholarship Fund of the University of Colorado Medical School, as well as a smaller sum to the Visiting Nurses' Association. It carried on Red Cross and Needlework Guild sewing, and sent out boxes and stockings for hospital wards at Christmas.

Delaware members served on the Public Health Committee of the Federation of Women's Clubs and allied organizations, and supervised a program of public health.

The District of Columbia presented some excellent programs on current health problems, the Food and Drug Bill, and on medical economics, all given by authoritative speakers.

Florida helped with many welfare projects; the sale of Christmas seals, raising milk funds for needy school children, collecting samples from the doctors' offices for colored charity, contributing to the Home for Crippled Children, to a medical missionary in India, and in assisting a student through school.

Georgia counts some sixty-eight talks on health for self-education given to the membership throughout the state, and 160 health talks given in turn by the members themselves to groups varying in age from the first grade through high school, as well as adult audiences.

Iowa held a health essay contest with the coöperation of the State Medical Society and with the Superintendent of Public Instruction serving as one of the judges.

In Kansas special attention has been given to legislation, both in the study of the bills themselves and in making a map of the state showing the location of the districts of the representatives and the senators and listing the doctors and the auxiliary members.

Louisiana had two state-wide interests: promoting periodic health examinations and aiding the committee for the Indigent Physicians' Fund.

Minnesota has published a history of the Minnesota Medical Auxiliary, which contains both county and state information.

Mississippi gave assistance to the State Board of Health by placing in the women's work of the CWA the teaching of hygiene and first aid in the schools. This resulted in several thousand children receiving such instruction and in the employment of eighty-five nurses as instructors.

Missouri has begun the publication of a quarterly bulletin which carries national, state, county, and personal news.

New Jersey reports relief work carried on by many counties, including a contribution made to the Doctors' Relief Fund of $500, two scholarship funds, and a widows and orphans' fund started.

New Mexico's welfare projects include a milk fund for undernourished children, and aiding a day nursery at Christmas time, and helping in the support of a county society for the relief of tuberculosis.

In New York State, Queens County raised $1,200, which was turned over to the medical society and used by them to complete and open the doctors' library. This same county realized on another benefit $150, which they used to redecorate the banquet hall of their medical building.

North Carolina supports a bed at the state sanatorium, and maintains a Students' Loan Fund, which was used this year to enable the daughter of a physician to complete her school year. An auxiliary representative was also sent to a state-wide meeting of lay organizations called to make a study of the school curriculum.

Oklahoma increased its Medical Student Loan Fund by adding half of the balance left in the treasury when all bills were paid.

The Oregon Auxiliary gave valuable assistance in the passage of a Basic Science Law through their state legislature and now that its repeal is threatened by a group of cultists, are busy again in defense of this standard of scientific medical education.

Pennsylvania includes junior groups in some of the larger auxiliaries, and these have been most active in promoting friendly relations among the new and younger members of the profession. In the university cities they have sponsored dances for medical students and internes, they have carried on an active campaign for the sale of Christmas seals, assisted in transportation for the Child Welfare work, and have called upon the wives of the younger doctors and convinced them that the auxiliary is a worthwhile cause.

South Carolina, which already keeps one medical student at the University of Virginia, is now busy raising funds which will enable a second one to attend.

Texas sponsored a state-wide program on the prevention and control of tuberculosis in preschool and adolescent children, with the result that more than six thousand children were examined or skin tested. The program did not urge free clinic service, but tried, instead, to reach the parents and inform and educate them, giving charity only where charity was necessary.

Virginia has given special attention to placing health programs before lay organizations and actively indorsed the health education program of the State Superintendent of Schools. Motion pictures, combined with lectures upon proper diet and the advisability of a yearly physical examination, have been given before ten schools and civic organizations.

In Wisconsin the auxiliary has placed 120 medical speakers before lay audiences during the year. Six of the counties have given radio broadcasts of health programs, and a fifteen-minute radio talk on some health subject is given every week by the executive secretary of the state auxiliary. Handbills announcing an important lecture by an American Medical Association speaker were printed and distributed by the school children, and brought out an audience of over seven hundred to hear him.

NEVADA STATE MEDICAL ASSOCIATION

HORACE J. BROWN, M.D.....Associate Editor for Nevada

' ' '

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E. E. HAMER, Carson City.....President-Elect
J. N. VAN METER, Las Vegas.....First Vice-President
W. H. FROLICH, East Ely.....Second Vice-President
HORACE J. BROWN, Reno.....Secretary-Treasurer

COMPONENT COUNTY MEDICAL SOCIETIES

CLARK COUNTY

The Clark County Medical Society held its initial fall meeting September 8. After caring for routine business of the society, and with the wives of the group as guests, the gathering was honored to have Dr. William S. Kiskadden of Los Angeles as guest speaker.

Doctor Kiskadden followed with a lecture and stereopticon demonstration of a series of cases relative to *Plastic Surgery*. After presenting a brief historical back-

ground of the origin of plastic surgery, the essayist pointed out the advances and improvements made in that branch of surgery in recent years. The case demonstrations by slide were a carefully selected group of the various types of deformities, to which the plastic surgeon falls heir. Cases included the more commonly seen congenital deformities and anomalies, *e. g.,* harelips, cleft palates, supernumerary digits, nasal deformities, syndactylism and other deformities of the hands and feet, absence of ears, contractures from burns, etc. In his accompanying talk, Doctor Kiskadden followed the patient from the beginning through the various operations to the end-results.

It was an instructive and interesting presentation.

HALE B. SLAVIN.

WASHOE COUNTY

The Washoe County Medical Society held its regular session Tuesday evening, October 9, in the State Building, Reno.

The application of Dr. H. E. Schwing of Hobart Mills, California, for membership in the society was read, approved, and referred to the Board of Censors for final action. The financial report of the secretary was then read, showing a balance on hand of about $300, and no indebtedness. There were no case reports presented.

Dr. Horace J. Brown made a report with reference to the banquet of the Nevada State Medical Association recently held in the Riverside Hotel, reporting a deficit in the state treasurer's fund and asking that the county society donate $125 for its relief. Upon motion of Doctor Morrison and duly seconded, the secretary-treasurer was authorized to write a check on the society for the above amount and remit the same to Doctor Brown.

Dr. J. LaRue Robinson introduced a series of resolutions with reference to the Washoe County General Hospital, stating in the first paragraph of the resolutions the following: "Whereas, the Washoe County General Hospital is now functioning properly for the benefit of Washoe County citizens; is staffed by regular 'doctors of medicine,' who give medical and surgical service, free of charge, to all Washoe County indigents entering the hospital, etc.

Whereas, One H. C. Brown, a chiropractor, and a recent resident of Reno, has received the nomination at the recent primary election to serve as long-term trustee of the Washoe County General Hospital, it being the belief of this committee his nomination, to a very considerable extent was gained through a misunderstanding because of the similarity of names of H. C. Brown, chiropractor, and Horace J. Brown, M. D., the latter a regular physician of Reno, and because of such misunderstanding, many voters believed that in voting for H. C. Brown, chiropractor, they were voting for Horace J. Brown, M. D; therefore be it

Resolved, That the Washoe County Medical Society does, at this its regular meeting, disapprove of his election as trustee to the Washoe County General Hospital. And that the Woman's Auxiliary of the Nevada State Medical Association and this the Washoe County Medical Society, will use every effort to defeat the election of H. C. Brown, chiropractor, for this office. This resolution was unanimously adopted by the society."

Upon motion, and duly seconded, a committee consisting of Drs. J. LaRue Robinson, Caples, West, and Shaw, were nominated by the chair to assist in arranging some form of coöperation to inform the public with reference to the similarity of the names of Brown, chiropractor, and Brown, M. D., at the coming election for trustee for the Washoe County General Hospital.

It was also moved by Dr. Dwight Hood and duly seconded that the chair appoint a medical legal committee to act in coöperation with a similar committee as should be appointed from the Elko County Medical Society, the White Pine County Medical Society, and the Clark County Medical Society, and that the secretary should inform the secretaries of the above named societies, giving the names of the Washoe County committee, and requesting their joint coöperation in the event of any emergency which might possibly affect the well-being of regular medicine for the State of Nevada.

It was suggested by Dr. S. K. Morrison that we seek an educational plan to distinguish regular physicians and surgeons from others who are termed doctors by affixing to our names the abbreviation of M.D. rather than the usual term of doctor preceding the name. This concluded the business of the evening.

Dr. A. L. Stadtherr presented a paper, *Indications for Surgical Treatment in Diseases of the Thyroid Gland.* He began by saying, "Changes of the thyroid gland are circulatory, inflammatory, functional, and neoplastic. Functional and neoplastic derangement constitute the largest proportions of thyroid diseases requiring surgical treatment. The thyroid gland, in conjunction with the parathyroid, controls the antitoxic bactericidal powers of the body. Pathologically, the surgical diseases of the thyroid are classed in various groups. These groups are generally accepted as colloid goiter, nontoxic adenoma, toxic adenoma, hyperthyroidism, exophthalmic goiter, and malignancies of the thyroid. Whether toxic or nontoxic, adenoma of the thyroid is a dangerous lesion and is held responsible for 90 per cent of all cancers of the thyroid. Two to five per cent of all adenomas become malignant after thirty. The toxic goiter, whether adenoma, hyperthyroid, exophthalmic, or malignant, presents one or more of the manifestations of nervousness, tachycardia, palpitation, tremor, insomnia, apprehension, mental aberration, irritability, restlessness, easy exhaustion, weakness, sexual inactivity, or menstrual dysfunction. Such complaints, associated with certain physical findings which vary somewhat with the type of thyroid, make the diagnosis of a group of illnesses resulting in goiter, which respond generally, promptly, and permanently to surgical treatment." In conclusion, Doctor Stadtherr said he believed all focal infections, especially septic tonsils, should be taken care of before a thyroidectomy is attempted.

THOMAS W. BATH, *Secretary-Treasurer.*

OBITUARY

Francis Jewell Crane
1854-1934

"The curfew tolls the knell of parting day."

The passing of Doctor Crane at his home in Round Mountain, Nye County, at the advanced age of eighty years, deserves a tablet in the Temple of Healing in the State of Nevada.

Doctor Crane was graduated from the Medical Department, Northwestern University, Chicago, in 1879. After a five-year residence in Chicago, he was attracted by the lure of Colorado's mining camp at Cripple Creek. Subsequently he became mayor of this important mining center when at that time the mayoralty of Cripple Creek was esteemed almost the equal of the governorship. When the camp's activities died down, he still followed the beacon star of destiny and located in the unique gold mining camp at Round Mountain in 1912.

Doctor Crane was interested in the work of the National Red Cross Society. In his earlier life he sought and obtained in Washington a personal introduction from Clara Barton, of Red Cross fame, to President Theodore Roosevelt.

Aside from his professional activities, he became Surgeon-General on the staff of both the Governor of Colorado and Governor of Nevada. He was a life member of the Nevada State Medical Society.

A giant in stature and genial as he was big, he will be remembered by services to his friends as one of those pioneer doctors to whom the helping hand was always extended, and in whose generous heart sympathy was always felt.

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings

American Medical Association, Atlantic City, New Jersey, June 10-14, 1935. Olin West, M. D., 535 North Dearborn Street, Chicago, Secretary.

American Society of Tropical Medicine, San Antonio, Texas, November 14-16. Henry E. Meleney, M. D., Vanderbilt University School of Medicine, Nashville, Tennessee, Secretary.

California Medical Association, Yosemite National Park, May 13-16, 1935. Frederick C. Warnshuis, M.D., 450 Sutter Street, San Francisco, Secretary.

Interstate Postgraduate Medical Association of North America, Philadelphia, Pennsylvania, November 5-9. W. B. Peck, M. D., 27 East Stephenson Street, Freeport, Illinois, Managing Director.

Pacific Coast Society of Obstetrics and Gynecology, Oakland and Del Monte, November 21-23. Clarence A. DePuy, M. D., 230 Grand Avenue, Oakland, Secretary.

Radiological Society of North America, Memphis, Tennessee, December 3-7, 1934. Donald S. Childs, M. D., 607 Medical Arts Building, Syracuse, New York, Secretary.

Southern California Medical Association, Los Angeles, November 2-3. Robert W. Langley, M. D., 1002 Wilshire Medical Building, Los Angeles, Secretary.

Southern Medical Association, San Antonio, Texas, November 13-16. Mr. C. P. Loranz, Empire Building, Birmingham, Alabama, Secretary.

Western Surgical Association, St. Louis, December 7-8. Albert H. Montgomery, 122 South Michigan Boulevard, Chicago, Secretary.

Medical Broadcasts*

American Medical Association Health Talks.—The American Medical Association broadcasts on a western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, central standard time.

The American Medical Association broadcasts on a Blue network of the National Broadcasting Company each Tuesday afternoon from 4:00 to 4:15 central standard time.

* * *

San Francisco County Medical Society.—The radio broadcast program for the San Francisco County Medical Society for the month of November is as follows:

Tuesday, November 6 (Election Day)—KJBS, 11:15 a. m., and KFRC, 1:15 p. m. Subject: Vote Today Against the Proposed Legislation Endangering the Public Health of California.

Tuesday, November 13—KJBS, 11:15 a.m., and KFRC, 1:15 p.m. Subject: The Work of the Visiting Nurses' Association of San Francisco.

Tuesday, November 20—KJBS, 11:15 a.m., and KFRC, 1:15 p.m. Subject: First Aid.

Tuesday, November 27—KJBS, 11:15 a.m., and KFRC, 1:15 p.m. Subject: The Way of the Vegetarian.

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to CALIFORNIA AND WESTERN MEDICINE, 450 Sutter Street, San Francisco, for inclusion in this column.

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of November is as follows:

Saturday, November 3—KFI, 9 a. m. Subject: Health Talk.

Saturday, November 3—KFAC, 10 a. m. Subject: Your Doctor and You.

Tuesday, November 6—KECA, 11:15 a. m. Subject: Health Talk.

Saturday, November 10—KFI, 9 a. m. Subject: Health Talk.

Saturday, November 10—KFAC, 10 a. m. Subject: Your Doctor and You.

Tuesday, November 13—KECA, 11:15 a. m. Subject: Health Talk.

Saturday, November 17—KFI, 9 a. m. Subject: Health Talk.

Saturday November 17—KFAC, 10 a. m. Subject: Your Doctor and You.

Tuesday, November 20—KECA, 11:15 a. m. Subject: Health Talk.

Saturday, November 24—KFI, 9:00 a. m. Subject: Health Talk.

Saturday, November 24—KFAC, 10 a. m. Subject: Your Doctor and You.

Tuesday, November 27—KFI, 11:15 a. m. Subject: Health Talk.

Meeting of Radiological Society of North America. The Radiological Society of North America will hold its next annual meeting at the Hotel Peabody, Memphis, Tennessee, December 3 to 7, 1934. The medical profession is cordially invited to attend. Further information may be obtained by addressing the secretary-treasurer, Dr. Donald S. Childs, 607 Medical Arts Building, Syracuse, New York. William E. Costolow and Robert R. Newell are counselors for California.

University of California Medical School.—On Friday, November 23, 1934, the annual alumni day will be celebrated at San Francisco Hospital. The morning session will be devoted to ward rounds, operative clinics, conferences and demonstrations, and the afternoon to a symposium on the autonomic nervous system in its relation to medicine and surgery. An outline of the program will be sent on request to Dean Langley Porter, Second and Parnassus, avenues, San Francisco.

On October 10, 1934, Dr. Frank B. Young of Long Beach addressed the faculty and students on "The Antiquity of Diseases." Doctor Young's talk was illustrated with a collection of paleo-pathological material, including original specimens, x-rays, photographs, and drawings.

On October 13, 1934, Dr. Robert F. Loeb, associate professor of medicine, Columbia University School of Medicine, held a clinic on "Diabetic Acidosis," which was attended by the faculty and students.

California Cities Maintain Low Infant Mortality Rates.—As usual, California cities in 1933 maintained their records for having the lowest infant mortality rates of any cities in the country. Among cities having populations of 50,000 to 100,000, Berkeley, with a rate of twenty-one, shares honors with Newton, Massachusetts. San Jose, in the same population classification, had the second lowest rate—twenty-three. Among cities having populations of 100,000 to 250,000, Long Beach was second, with a rate of thirty-

five. Among cities having populations over 250,000, Oakland was second, with a rate of thirty-eight. The Oakland record was bettered only by Portland, Oregon, thirty-three. Seattle, Washington, shared honors with Oakland in maintaining a rate of thirty-eight. There is significance in the fact that all three of these large cities are on the Pacific Coast. Portland, for several years, has maintained the lowest infant mortality rate among the larger cities. Berkeley, for many years, has maintained the lead among cities of the United States having populations between 50,000 and 100,000.

The American Child Health Association, in announcing these records, states that "in appraising these rates it must be borne in mind that they are crude and not corrected rates. That is, they are based on the births and deaths reported as occurring in a city. The city with inadequate hospital accommodations uses the hospitals in adjacent areas. Births and deaths occurring in hospitals are charged to the city in which the hospitals are located, and not to the city in which the people live who come to the hospitals. A truer picture is obtained from the corrected rate in which births and deaths are reclassified on the basis of residence. It is hoped that ultimately all vital statistics data will be corrected for residence."

The records made by these California cities are conspicuous when it is taken into consideration that the infant mortality rate for the 985 cities of the birth registration area is 57.1. The Berkeley infant mortality rate was almost one-third that for cities of the registration area. It is recognized that the infant mortality rate has resulted from a number of causes, such as the social and economic status, family customs, characteristics of different races and nationality groups, climatic conditions, the extent of modern medical service provided, as well as the extent and character of public health effort. It is certain, however, that these rates are dependent to a large extent upon the efforts expended in preventive medicine and public health.

Annual Alumni Day, University of California Medical School.—This will be held on Friday, November 23, 1934, at the San Francisco Hospital, San Francisco. The program follows.

MORNING SESSION

Division of Medicine

9-11 a.m.—Medical Wards Rounds: Ward E, Drs. L. H. Briggs, E. L. Bruck, S. P. Lucia, S. R. Mettier, C. D. Mote, S. T. Pope, H. C. Shepardson, S. J. Shipman.

Clinical Pathology: Ward E, Dr. R. J. Reitzel—Diagnosis of gonococcus infection by cultural methods. Dr. W. A. Reilly—Calcium metabolism studies in children having active tuberculosis.

Neuropsychiatry: Ward R, Drs. E. W. Twitchell, Eva C. Reid, P. A. Gliebe, D. A. Macfarlane.

Tuberculosis: South Wing, Ward 25, Drs. Esther Rosencrantz, B. L. Freedlander.

Division of Surgery

8-11 a.m. — Operative clinics, operations, and discussions.

General Surgery: Dr. H. Brunn and staff.
Thoracoplasty—Drs. H. Brunn, A. L. Brown, H. W. Stephens, S. J. Shipman.
Stomach or Large Bowel—Drs. H. Brunn, G. K. Rhodes, A. R. Kilgore.
Hernia—Drs. C. L. Callander, W. Birnbaum.
Gall-Bladder—Drs. S. H. Mentzer, F. S. Foote.

Orthopedic Surgery: Dr. L. C. Abbott and staff.
Albee graft.

Gynecology: Dr. W. B. Moore and staff.
Hysterectomy.
Pelvic inflammatory.

Urology: Dr. F. Hinman and staff.
Treatment of prostatic obstruction.
1. Radical perineal prostatectomy.
2. Conservative perineal prostatectomy.
3. Transurethral prostatectomy.
Surgical demonstrations of the three methods. Discussion of the indications for each, the mortality, and results.

Ear, Nose and Throat: Dr. W. B. Smith and staff.
8-9:30 a.m. — Radical antrum operation under local anesthesia.
9:30-10 a.m.—Laryngeal clinic, Ward S.

Eye: Dr. F. C. Cordes and staff.
9-10:30 a.m.—Newer developments in treatment of detached retina; non-operative clinic with pig's eyes.

11 a.m.-12 noon—Medical, Surgical, X-Ray Conference. Amphitheater above surgical pavilion. Dr. H. E. Ruggles and medical and surgical staffs.

12 noon to 1 p.m.—Clinicopathological Conference. Amphitheater above surgical pavilion. Drs. G. Y. Rusk, J. L. Carr, L. W. Buck, and medical and surgical staffs.

1-2 p.m.—Luncheon, social hall, nurses' home, San Francisco Hospital.

AFTERNOON SESSION

2-4 p.m.—Symposium on autonomic nervous system in its relation to medicine and surgery.
General discussion of the anatomy of the sympathetic nervous system—Dr. J. B. Saunders.
Relationship of autonomic nervous system to dysmenorrhea—Dr. Margaret Schulze.
Sympathectomy in intrathoracic disease — Dr. H. W. Stephens.
Sympathectomy in the treatment of peripheral vascular disease and congenital megalocolon—Dr. L. B. Lawrence.
Relationship of autonomic nervous system to cardiac function—Dr. J. J. Sampson.
Endocrine operations for circulatory disorders—Dr. H. C. Shepardson.

Southern California Medical Association.—The semiannual meeting of the Southern California Medical Association was held in Los Angeles in the auditorium of the new Los Angeles County Medical Building, and bedside demonstrations given in wards of the new General Hospital on Friday, November 2, and Saturday, November 3.

The guest speaker was Lawrence Selling, M. D., clinical professor of medicine, University of Oregon Medical School, whose subject was "Diagnosis of Epilepsy." The program follows:

Friday Afternoon, November 2

Cerebrovascular Lesions — A Clinical Pathological Survey by Cullen Ward Irish of Los Angeles. Discussion by John B. Doyle and Cyril B. Courville of Los Angeles.

Apnoes Under Anesthesia by Arthur E. Guedel of Los Angeles. Discussion by W. W. Hutchinson and A. J. Wineland of Los Angeles.

Diagnosis and Treatment of Common Skin Diseases in School Children by Neyson Paul Anderson and Samuel Ayres, Jr., of Los Angeles. Discussion by Louis F. X. Wilhelm and Moses Scholtz of Los Angeles.

Review of One Hundred and Ninety Cases of Heart Disease Complicating Pregnancy by James F. Anderson and Bernard J. Hanley of Los Angeles. Discussion by Lyle G. McNeile and Robert W. Langley of Los Angeles.

Saturday Morning, November 3

A clinical pathological conference was held in the Los Angeles General Hospital, 1100 Mission Road (new unit), under the direction of Drs. Newton Evans and Ernest Hall and members of the clinical staff.

Saturday Afternoon, November 3

Public Health and Medical Coördination in Poliomyelitis Control by J. L. Pomeroy, Los Angeles County Health Officer. Discussion by A. J. Scott and H. Douglas Eaton of Los Angeles.

Schuller-Christians' Disease (Lipoid Xanthomatosis) with Case Report by Edgerton Crispin of Los

Angeles. Discussion by Raymond Taylor and Verne Mason of Los Angeles.

The Adrenal Hormones in Relationship to General Medicine by F. M. Pottenger and F. M. Pottenger, Jr., of Los Angeles. Discussion by Clinton Thienes and Roland Cummings of Los Angeles.

Dysenteries in Southern California by John F. Kessel of Los Angeles. Discussion by John V. Barrow of Los Angeles and Andrew Bonthius of Pasadena.

Symposium on Heart Disease.—The Heart Committee of the San Francisco County Medical Society will hold its fifth postgraduate teaching course on heart disease November 21-22, 1934. The meetings are scheduled as follows:

Wednesday, November 21—Morning session, Mount Zion Hospital. Afternoon session, San Francisco Hospital. Evening session, University of California Hospital.

Thursday, November 22—Morning session, University of California Hospital. Afternoon session, Stanford University Hospital. Evening session, San Francisco County Medical Society.

An interesting program is being prepared to include the various phases of cardiovascular disease. The final evening session will be in the nature of a clinical pathological conference on heart disease, followed by a discussion of Thyroidectomy in the Treatment of Congestive Failure and Angina Pectoris. Dr. John P. Strickler, chairman of the Program Committee, announces that there will be no fee in connection with the symposium, and that all doctors who are interested are welcome to attend. The programs will soon be ready for distribution. If you desire a copy mailed to you, please notify the secretary, J. Marion Read, M.D., 490 Post Street, San Francisco.

"RADIO EDUCATION OR RADIO PROPAGANDA"

The item which follows, with the caption "Broadcasts on Medical Economics," was originally marked for the "News" column of this issue. However, because of comments in *The Journal of the American Medical Association* (October 27, page 1310) and other discussions in *Time* (October 29, page 12), it now has its present place in this issue in order to give emphasis to *The Journal of the American Association* criticisms.

BROADCASTS ON MEDICAL ECONOMICS

For the first time, the National Advisory Council on Radio in Education enters the field of public health with a series of broadcasts entitled "Doctors, Dollars, and Disease."

There will be nineteen programs of fifteen minutes each (10:45-11:00, Eastern Standard Time; 7:45 p. m., Pacific Standard Time), every Monday evening from October 2 through February 25 (excepting October 27, November 5, and November 12), over a nation-wide network of the Columbia Broadcasting System. . . .

"The recent progress of the science of medicine has been little short of miraculous," says the announcement of the series. "Physicians as a rule have shown fine professional spirit and have given freely of their time without pay. Yet more than fifty million persons in the United States either do not receive the care which they need, or are heavily burdened by its costs, while many practitioners and agencies for health are under-employed and poorly paid. The barrier is mainly economic. It stands between the doctors and the dentists and the nurses who are able and eager to serve and the patients who are sorely in need of the service. The problem is to bring doctors and dollars and diseases into such helpful and continuous contact with each other that the *practice* of medicine can keep pace with the *science* of medicine. That is the central theme of this series." . . .

"The purpose of this series of radio talks is not to advocate any one solution of the problem, but to furnish reliable information and stimulate discussion," says the announcement.

All the programs will be published by the University of Chicago Press, 5750 Ellis Avenue, Chicago, and each program will be available shortly after it is broadcast, for fifteen cents for individual numbers, or two dollars for the series of nineteen.

The Public Health Committee of the National Advisory Council on Radio in Education is headed by William Trufant Foster, Director of the Pollak Foundation, and includes Dr. Haven Emerson, Dr. Alice Hamilton, Dr. Thomas Parran, Jr., Dr. H. S. Cumming, and Dr. Ray Lyman Wilbur. The National Advisory Council on Radio in Education is headed by Robert A. Millikan as president, and Levering Tyson is the director. . . .

The remaining program is as follows:

November 19—Thomas Parran, Jr., M. D., Commissioner, State Department of Health, New York: Public Health Needs.

November 26—George H. Bigelow, M. D., Director, Massachusetts General Hospital, Boston: Preventive Medicine.

December 3—Nathan B. Van Etten, M. D., New York City: Abuses of Medical Charity.

December 10—Ray Lyman Wilbur, M. D., President, Stanford University; former President, American Medical Association: The Doctor's Part in Medical Care.

December 17—Paul H. Douglas, Ph. D., Professor of Industrial Relations, University of Chicago: Uneven Costs of Sickness: How to Meet Them.

December 24—William Trufant Foster, Ph. D., Director, Pollak Foundation: Tiny Tims of Today.

December 31—Michael M. Davis, Ph. D., and C. Rufus Rorem, Ph. D., C. P. A., Julius Rosenwald Fund, Chicago: Progress in 1934.

January 7—Frank Van Dyk, Executive Secretary, Hospital Council of Essex County, New Jersey, and Homer Wickenden, A. M., General Director, United Hospital Fund, New York City: Budgeting Hospital Bills.

January 14—Miss Katherine Tucker, R. N., General Director, National Organization for Public Health Nursing, Inc.: The Nurse's Part in Medical Care.

January 21—Nathan Sinai, D. P. H., Director of Research, Michigan State Medical Society: Mutual Health Service.

January 28—William Hard, L. D. H., Journalist, Washington, D. C.: The Government's Part in Medical Care.

February 4—Haven Emerson, M. D., College of Physicians and Surgeons, New York; former President, American Public Health Association: The Future of Medical Care.

February 11—I. S. Falk, Ph. D., and Edgar Sydenstricker, Milbank Memorial Fund, New York City: Present Trends in Health Insurance.

February 18—Harry H. Moore, Ph. D., Director of Study, Committee on the Costs of Medical Care: The Man from Mars Asks Questions.

February 25—Livingston Farrand, M. D., President, Cornell University: Next Steps.

From the editorial comments in *The Journal of the American Medical Association,* the following excerpts are printed:

"DOCTORS, DOLLARS AND DISEASE"—RADIO EDUCATION OR PROPAGANDA

"In 1929 a series of meetings called by the American Association for Adult Education resulted in the formation of a body known as the National Advisory Council on Radio in Education, Inc. Its general purpose is said to be to 'further the development of the art of radio broadcasting in American Education.' Recently, Congress enacted some legislation entitled 'The Federal Communications Commission Act,' which automatically abolished the Federal Radio Commission. This act also makes it mandatory on the new commission 'to study the proposal that Congress by statute allocate fixed percentages of radio broadcasting facilities to particular types or kinds of nonprofit radio programs' and to report to Congress by February 1, 1935.

"The National Advisory Council on Radio in Education, Inc., is exceedingly interested in this problem, because it has made education of the public over the radio its particular province since the time of its organization. The council wants more time on the air for education. In a recently issued circular, the director says 'The council is an organization independent of faction, nonpartisan in its procedure, disinterested as to personnel and noncommercial in operation.' Notwithstanding these assertions, the medical profession is now confronted with the promotion by the National Advisory Council on Radio in Education, Inc., of a series of broadcasts under the title 'Doctors, Dollars and Disease,' said to be presented by the Public Health Committee of the National Advisory Council on Radio in Education, Inc. These programs are offered every Monday evening over WABC, Columbia network, extending from coast to coast, at 7:45 Pacific time, 8:45, Mountain time, 9:45 Central time, and 10:45 Eastern time.

"Let us then view the nature of the organization of the Public Health Committee which prepared the program and the nature of the program itself to see to what extent the National Advisory Council on Radio in Education, Inc., has fulfilled its claims of being independent of faction and nonpartisan in procedure. The Public Health Committee includes as its chairman William Trufant Foster. This is the same Foster, an economist and not a physician, who attacked organized medicine bitterly at a conference held in Philadelphia last February, fully reported in *The Journal*, March 3, page 701. Associated with Mr. Foster on this committee are the following physicians: Ray Lyman Wilbur, chairman of the Committee on the Costs of Medical Care and signer of its majority report; Thomas Parran, Jr., health officer of the state of New York, committed in repeated addresses to compulsory health insurance and measures leading to the socialization of medicine; Haven Emerson, formerly a president of the American Public Health Association and a signer of the majority report. Included with these four are Alice Hamilton, a distinguished investigator in industrial diseases, whose writings indicate nevertheless that her pity for the sad fate of the majority of mankind overbalances her scientific judgment in matters of social control, and, last of all, Dr. Hugh S. Cumming, surgeon general of the United States Public Health Service. It will be obvious to any one that this Public Health Committee of the National Advisory Council on Radio in Education, Inc., is overwhelmingly controlled by the state medicine and socialization of medicine points of view, and that it contains no definite representative of the 100,000 physicians organized as the American Medical Association.

"The radio program developed under the auspices of this committee is, as might have been expected, overwhelmingly for the socialization of medical care. It contains the name of but one person who signed the minority report of the Committee on the Costs of Medical Care, and there are indications that he accepted under a misapprehension as to the nature of the program and will not appear. Those who are to discuss the future of medical care and the subject of medical economics are for the most part nonmedical men, unfamiliar with medical practice and for the most part definitely opposed in their writings to the policies of organized medicine. . . . .

"It should be clear to any physician that this program indicates an attempt on the part of the interests represented in the majority report of the Committee on the Costs of Medical Care to further its propaganda. In developing a program of this type the National Advisory Council on Radio in Education, Inc., has been untrue to the principles on which it was established. Thereby it fails to merit support from the medical profession. Nevertheless, physicians will do well to be aware of the matter and to use such influence as they may possess with the radio stations that carry such material to bring about a realization of its true nature.

"It might have been within the province of the National Advisory Council on Radio in Education, Inc., to develop a series of useful lectures on the prevention of disease and on the maintenance of health. It might have used some of the time, which apparently it is able to get without charge from the broadcasting chains, for the enlightenment of the public on many of the scientific fallacies promoted by commercial interests. It has, however, failed to avail itself of these opportunities, devoting itself and its time instead to what constitutes essentially an undermining of the medical profession of this country. It would be interesting to know the motives that animated the executive officers of the National Advisory Council on Radio in Education, Inc., to lend themselves to this propaganda."

* * *

Our last quotations are from *Time*, and are worthy of perusal in connection with the above. *Time* states:

RADIO

"Free Time.—How much free time, if any, should Radio give to religious and educational programs?

"For months this question has been bumping loosely and loudly around Washington. Religionists and educators felt that the New Deal, as part of its general reform program, should open the air wider to them. The Federal Communications Commission took the question firmly in hand and proceeded, through a three-man board, to hold public hearings. Last week Radio's biggest wigs trooped to Washington to protest any plan which would force them to take into their broadcasting studios any specified number of preachers or pedagogues and permit them to hold forth, without charge, for any specified amount of time.

"Suave young President William Samuel Paley of Columbia Broadcasting System pointed out that his chain is already giving one-sixth of its time free to religion and education. Said he: 'Columbia has carefully refrained from imposing on its audience any small personal concepts of what the audience ought to receive.'

"President Merlin Hall Aylesworth of National Broadcasting Company gave education a round scolding for having alienated its Radio pupils by 'monotony and poor showmanship.' Cried he: 'People do not want to be educated. They want entertainment. . . . Our guilt lies in having been too big-hearted in our desire to help educators.' By way of support, NBC's program director produced a testimonial from Henry L. Mencken: 'The pedagogues now have all the time they can fill profitably—and more. Their programs are puerile and dull. There is no evidence that they would do any better if they had all day.' " . . . . .

THE CORONER'S OFFICE OR THE MEDICAL EXAMINER SYSTEM?*

Citizens' Business

A leaflet issued by the Committee on Medico-Legal Problems of the Institute of Medicine of Chicago and distributed in its booth at the Chicago Century of Progress Fair, contained the following parallel column contrasts:

WHICH?

The Coroner's Office	The Medical Examiner System
Established in the twelfth century to serve the interests of the crown.	Established to serve the interests of the public of the present time.
HOW SELECTED	
Usually by election.	Appointed by the Governor or Civil Service Commission.
LENGTH OF SERVICE	
Usually two to four years.	Indefinite. In the jurisdictions in which this system is in operation, the medical examiners have served for long periods of time.
QUALIFICATIONS	
None in most States.	Physicians who are graduates of accredited medical schools, with special training in pathology.
DUTIES	
Medical: To determine causes of death. Legal: To hold inquests. The legal investigations must be repeated by the State's Attorney if he must prosecute.	Medical only. The legal investigations are made by the District or State's Attorney.
AUTHORITY	
Poorly defined by antiquated laws that have not been revised to meet present conditions.	Clearly defined by modern legislative enactments.
COST	
The coroner's office in New York City in the last year of its existence, 1917, cost $172,000.	The medical examiner's office of New York City in 1929 cost $166,705. The population had increased 16 per cent; the work done had increased proportionately even more than the population.
HOW WELL IS THE WORK DONE	
Poorly, because of unqualified incumbents, antiquated laws, political influences, or all of these.	Excellently in all communities where it is in operation, because of qualified incumbents and clearly defined, up-to-date legislative enactments.

NATURE OF THE WORK PERFORMED

Investigation of deaths due to suspected criminal homicide, in which criminal prosecutions may follow.

Investigation of deaths due to suicide and casualty, which may give rise to claims for accident, disability, or life insurance, or for workmen's compensation.

Investigation of sudden deaths unattended by a physician, to exclude crime and to authorize legal death certificate.

Which gives the taxpayer more for his money, better safeguards the interests of society, makes for better administration of criminal justice? The Coroner's office or the Medical Examiner system?

* * *

Some Editorial Comments

The elective coroner in New York City represents a combination of power, obscurity, and irresponsibility which has resulted in inefficiency and malfeasance in the administration of the office.—Leonard M. Wallstein, former Commissioner of Accounts of New York City.

The inquest is, as a general rule, without value in determining the cause and circumstances attending death. Moreover, as it is now conducted it does not possess the first requirements of a judicial proceeding.—Raymond Moley, "The Office of Coroner," The Missouri Crime Survey.

* See also editorial comment on this subject, page 340.

The coroner does nothing that must not be done over again. No reliance can be placed on anything that he has done, nor can he be trusted to do anything right.—Joseph DuVivier, former Assistant District Attorney for New York County.

The coroner's inquest is scarcely more than a formality.—Editorial, Chicago Daily Tribune, April 5, 1933.

Is it not about time for the office of coroner to be reformed or abolished as both useless and costly?—Editorial, The Chicago Daily News, April 7, 1933.

The repression of crime demands the community's will to repress it. . . . It demands also the reconstruction of antiquated public machinery. — Editorial, The Chicago Daily News, October 25, 1933.

Coroners' inquests, at least in murder cases, are useless and even mischievous. At best they duplicate the work of other law-enforcing agencies—Editorial, The Chicago Daily News, November 1, 1933.

* * *

The official handbook of exhibits in the Division of Basic Sciences in the Hall of Science described the exhibit of the Institute of Medicine of Chicago in the following language.

Institute of Medicine of Chicago

"This exhibit presents an outline of medico-legal facts. The central feature is a diorama which symbolizes the tragedy and enigma of death. This is flanked on each side by two smaller dioramas that portray graphically the four classes into which the death may fall: homicide, suicide, accident, and sudden death. On either side of the diorama unit are painted panels. One is symbolic of the medical examiner system, showing a modern autopsy room with a shrouded body and a gowned figure of a physician ready to begin his examination; in the background are sketches indicative of the scientific procedures that a proper examination must make use of: pathology, bacteriology and serology, chemistry and toxicology, and microscopy. The panel of the opposite side is symbolic of the coroner system. It depicts the usual type of coroner's jury being sworn in for the inquest in the presence of the dead body as the law requires. In the background, corresponding to the scientific procedures in the other panel, are sketches portraying coroner's juries at different periods in history, the object being to illustrate that the office has not changed much since its earliest days. Lettered panels give the essential features of the two systems in use in this country, including such data as origin, mode of selection, tenure of office, qualifications, duplication of other agencies of government, and cost. Diagrams show the organization and relationships within the judicial administrative system of the European medico-legal system with its institute of legal medicine. A similar diagram shows the same features of the two American systems. A few well-selected specimens illustrate some of the features of the different kinds of death that must be officially investigated."

CORRESPONDENCE

Subject of following letter: A communication from the Pacific Roentgen Club concerning an article by Dr. Howard H. Johnson, printed in the September issue of the "Western Hospital Review."

October 15, 1934.

To the Editor:—In the September issue of your journal there appeared an article entitled "Crossroads—Cross Purposes" by Dr. Howard H. Johnson of San Francisco. Since this article proposes changes of a rather radical type in the practice of medicine in the State of California, and since it appears to contain some incorrect or misleading statements, we beg to submit the following for publication:

Fundamentally, the article is a plea for the early establishment of a hospitalization insurance plan in California. One of the main arguments used to support this plea is the alleged success of the plan in Cleveland. One of the major factors in the plan in Cleveland is the provision of x-ray and similar services along with the hospital benefits. We will commence our discussion by commenting on some of the statements in Doctor Johnson's article.

1. On page 6, paragraph 1, Doctor Johnson states that "A plan was then devised by the Academy which would place the 'x-ray . . . men' on exactly the same basis as other . . . professional men practicing in hospital work." This is incorrect and misleading. The actual plan as devised would place the x-ray physician on a totally different status to that of other physicians in the hospital. The radiologist would be prevented from conducting and assuming the responsibility of the examination of the patient himself; a third party, a layman (the technician) hired by and responsible only to the hospital, would be interposed between the physician and the patient. Again, the collection of fees for professional responsibility and opinion would not necessarily be attended to by the radiologist himself; such would only be done if interpretation and consultation had actually been requested by the patient's other physician.

2. In the second paragraph appears the statement, "Academy members were furnished with . . . a statement of those medical men, principally x-ray men, who opposed the plan." This is incorrect. The statement was furnished by physicians in general in Cleveland. It is to be noted that only 266 out of 1,000 Cleveland Academy members, who were circularized, actually voted; of these, only 156 voted for the plan. In the opinion of many, the plan as outlined by the Academy was so ambiguously worded that it may be assumed that even the *15.6 per cent* who voted "Yes" did not fully understand the proposal.

3. In the third paragraph on page 6 appears the statement, "x-ray . . . work of a diagnostic and therapeutic type is thus no longer monopolized. . . ." This is doubly misleading. The major number of hospitals in Cleveland still operate with their radiologists on their former status. In connection with the use of the word "monopoly," it is worth remembering that Doctor Johnson's able friend, Dr. A. C. Christie of Washington, D. C., has repeatedly pointed out that the practice of radiology in the hospital is a form of monopoly *by the nature* of hospital work and not one by choice, and Doctor Johnson is aware that in San Francisco any recognized radiologist is welcome in any hospital x-ray department—the patient need not consult the staff radiologist, except when he so desires. There is no more of a monopoly in the strict sense of the word than actually exists in other departments in the hospital.

4. Doctor Johnson makes the statement that such a plan "will also make it possible to arrange . . . fee schedules on a lower basis." This is very dubious if not actually incorrect. The actual cost of performing radiological procedures has shown no appreciable reduction in the last few years and is probably close to its basic level. Therefore, if the hospital is to recover its costs in the x-ray department, and the physician his reasonable fee for examination, interpretation and consultation, the proposed plan would merely result in the division of the fee into two portions, the total amount of which would be no lower than the present fees. Any further reduction must obviously come from the physician's income.

The responsibility for the examination and treatment of a patient by x-rays is a medical one; such procedures are always dangerous in unskilled hands. Therefore, it would seem unwise for any physician to urge that a lay corporation has the right to assume this responsibility and to regulate the fees that should be charged.

General Comment

The root and source of the whole problem under discussion lie in the desire of the Cleveland Hospital Council to sell, not a group hospitalization plan, but a group hospitalization-with-diagnostic-medical-care plan. Now, the radiologists in Cleveland have always supported and will continue to support any sincere attempt at furnishing hospitalization, or hospitalization and medical care, at reasonable rates upon a reasonable basis. But when laymen or hospitals or any corporation attempt to furnish medical care (*i. e.*, diagnostic x-ray work) along with *and as a part of* hospitalization, then those radiologists, like any other physicians, resent it. They resent it because medical service cannot be properly furnished by laymen; if it were it would lower the status of radiology, and thereby the status of diagnostic and therapeutic care in general. They resent it because physicians and lay-

men alike have pointed out that it would be merely the opening wedge, which could easily result in the inclusion of other types of medical service, until finally lay groups could have complete control of the practice of medicine.

Doctor Johnson implies that the Cleveland plan is working well, that the policies are being sold and that the quality of care afforded the sick patient is not being lowered.

What are the facts? Direct from Cleveland come these answers:

1. The Cleveland Hospital Council has fifteen member hospitals in Cleveland, with a total bed capacity of 3,132 beds. The Cleveland plan is actually operative at present in connection with only 25 per cent of those beds, that is, virtually only with the University Hospital group. The other hospitals, representing *75 per cent* of the Cleveland bed capacity, are at present handling no group hospitalization cases at all.

2. How are the policies being sold? They are being sold with difficulty, the salesman sometimes implying that x-ray service is free. In view of what the patient believes he is getting when he pays for x-ray service, this is obviously not so; however, this allegation is being used and will continue to be used as one of the selling points. Because of this fact alone, one of the directors of the second largest private hospital in Cleveland (the Mount Sinai) has stated emphatically that, as far as he is concerned, Mount Sinai will take no group hospitalization cases. He believes that the plan is being misrepresented to the public.

3. The writer has seen a record of the work done by the University Hospital in Cleveland on a patient recently in there as a "flat-rate diagnostic case." This patient paid $38.50 for a three-day stay in the hospital, having x-ray films made on many parts of her anatomy. Based on the cost of "technical service," as drawn up by the Cleveland Hospital Council, the hospital received $25.50 for the production of these films. Does this sound economical? In addition, the patient had a gastro-intestinal series, no films being made. One wonders what exact value this "flat-rate diagnostic service" was to the patient. One wonders if fewer x-ray films and a more thorough clinical examination, such as was practiced under the old system, would not have been better.

In conclusion, we may note Doctor Johnson's remark that Cleveland has solved the problem of the exploitation of physicians by the hospital. We doubt if it has. We doubt it for many reasons, chiefly because the "Cleveland plan" which Doctor Johnson outlines is *not* the plan in operation in Cleveland, but also because, outside of the University Hospital group, there are *no* hospitals in Cleveland where anyone *but* a radiologist is permitted to examine the patient roentgenologically.

The hospital represents an unselfish community effort to provide the best type of care for the sick; to properly discharge this function it maintains, among other departments and facilities, adequate facilities for modern x-ray care. Everyone agrees that it must have a great interest in its x-ray investment, including its space and equipment; everyone agrees that the hospital must receive a just and fair income from its x-ray department, based upon reasonable rent for space used, and reasonable interest and depreciation on equipment purchased.

But the hospital should not expect to make a profit from professional medical procedures like the production of roentgenograms. If hospitalization insurance policies can only be sold by the inclusion of so-called hospital x-ray service, a point yet to be shown necessary, there would seem to be better ways of doing this than by the artificial division of the x-ray examination. The tendency of such division would be to decrease the quality and soundness of the medical care practiced in the hospital, which is certainly not the desire of the medical staff or the board of directors, that is, of the people who actually make the hospital what it is . . . a living institution for the care of the sick. We are

Very truly yours,

THE EXECUTIVE COMMITTEE OF THE PACIFIC ROENTGEN CLUB.

L. H. Garland, Secretary.

P. S.—Since this matter is of state-wide medical importance, a copy of this letter is being mailed to the editor of "California and Western Medicine" for publication in that journal. In addition, a short article summarizing the objections to, as well as the dangers of, the division of medical x-ray work into two artificial portions has been prepared. Copies of this article are available to all those interested.

Suite 1739, Four Fifty Sutter Street, San Francisco.

THE KETOGENIC DIET—pH DETERMINATIONS*

"The treatment of urinary infection with the ketogenic diet is a form of therapy based on producing within the body itself a chemical state which will result in the secretion of urine by the kidneys which has marked and germicidal properties. It is a known fact that bacteria will not only not grow but that they are destroyed when the acidity of the media upon which they are growing is converted into an acid media of a sufficient concentration. So it is with the urinary tract of the human body. It has been successfully demonstrated that by controlling a person's diet such a state can be produced.

"It has been known for some years that if the body is starved of carbohydrate food the normal metabolism of fats is interfered with—the fatty acids being incompletely broken down, with the result that B-oxybutyric acid, aceto acid, and acetone (collectively spoken of as ketones or ketone bodies) appear in the urine. . . .

"For a number of years the ketogenic diet, *i. e.,* a high fat and low carbohydrate diet, has been used in the treatment of certain conditions, notably epilepsy. The interesting observation was made that all cases so treated were singularly free of urinary infections. . . .

"In speaking of urinary tract infections it is necessary to determine, before instituting any type of therapy, the exact state existing in the urinary passages. Needless to say, it is important to make a complete and thorough investigation of the patient's general health. . . .

"Having secured the above information and having found a condition existing in the urinary tract, resulting from the bacterial invasion, the patient is placed upon a ketogenic diet, and the diet regulated and carefully supervised so as to produce a ketosis with a known hydrogen ion (known as pH) concentration.

"To the uninformed the expression, 'pH concentration,' may sound discouragingly scientific. At least it is an expression which may sound somewhat extraneous to the scientific vocabulary of the known scope of the nursing profession. However, this is a scentific simple understandable chemical state that can be made very elementary and easily workable. It is an essential part of the routine necessary in applying scientifically the ketogenic diet in urinary infections. I am, therefore, going to take this opportunity to explain to you the A, B, C of hydrogen ion concentration and pH control.

"Acidity and alkalinity have long been recognized as important factors in practically all branches of research and industrial work. Sugar manufacturers and refiners, electroplaters and electrotypers, paper manu-

*Excerpts from a paper by Hugh F. Dormody, M. D., Monterey, and printed in the September, 1934, issue of the "Pacific Coast Journal of Nursing."

For other comments on Ketogenic diet, see pages 336-337.

facturers, sanitary engineers, agriculturists, bacteriologists, biologists, etc., have, therefore, used various methods for detecting and controlling acidity and alkalinity, since they have learned by experience that this factor has a very marked effect on the yield and equality of their product, the efficiency of manufacturing processes, corrosion of metals, absorption of dyes, by fabrics and clays, the stability of various materials, the growth of bacteria, the diagnosis of diseases, etc.

"While detection and control of acidity and alkalinity are of such universal application, the real benefits of accurate methods were not fully realized until the past few years, due to the fact that the old methods of testing, such as by litmus and other test papers, and by titration, often gave erroneous and misleading results. Although various workers were apparently maintaining the same condition in a given operation, as indicated by the old methods, the application of pH control showed that the conditions actually varied widely. This explains many failures and variations in results which could not otherwise be accounted for. In industrial work pH control has also reduced production costs to an amazing degree. This is due to large savings in both time and chemicals, to the prevention of losses, such as the inversion of cane sugar, and to the fact that operating conditions are not only greatly simplified but that they can be duplicated exactly.

"Although pH control has proved its value, and has, therefore, been widely adopted in so many different lines of work, many still hesitate to use it, since they feel that its application requires the services of a chemist who has been specifically trained in this type of work. Such is not the case, however. In fact, it is almost as simple to make a pH determination as it is to make a measurement of temperature, and these determinations can be made just as easily and accurately by a nurse as by a trained chemist.

"In discussing the meaning of pH control, we shall first explain it in such a simple manner that the non-technical person can understand and apply it.

"Everyone is familiar with the Fahrenheit thermometer. On this scale, 32 degrees represents the freezing point of water. For the sake of illustration we shall assume that values above and below 32 degrees represent degrees of heat and coldness, respectively. Thus, any values higher than 32 degrees, such as 34 degrees, 36 degrees, 40 degrees, etc., denote an increase in heat, the degrees of heat increasing as the numbers increase. On the other hand, any values below 32 degrees, such as 30 degrees, 28 degrees, 20 degrees, etc., denote an increase in coldness, the degree of coldness increasing as the numbers decrease.

"In a similar manner the degree of acidity or alkalinity of a solution is expressed by the pH scale. Instead of being called degrees, as in the case of the thermometer, the units on this scale are called pH values. It is apparent that it is not necessary for a person to know the derivation of the term 'degree Fahrenheit' in order to determine the temperature of a solution by means of a thermometer. It is equally true that the worker need not know the meaning of the term 'pH' in order to use this method for measuring acidity and alkalinity. On the pH scale, a value of pH 7.0 represents neutrality. This means that if the material being tested has a pH of 7.0 it is neither acid nor alkaline.

"Following the illustration of the thermometer given above, any values higher than pH 7.0, such as 7.2, 7.4, 8.0, 9.0, 10.0, etc., denote alkalinity, the degree of alkalinity increasing as the numbers increase. Analogously, any values lower than pH 7.0, such as 6.8, 6.6, 6.0, 4.0, 2.0, etc., denote acidity, the degree of acidity increasing as the numbers decrease. . . .

"A pH value is, therefore, simply a number denoting the degree of acidity or alkalinity of a solution, and an operator will learn in a few days to use this term just as intelligently as he does the term 'degree Fahrenheit.' Since the significance of 'pH' has been explained, we shall use this term throughout to denote the degree of acidity and alkalinity.

"To give a concrete example, let us say that a solution has a pH of 7.6. The solution is, of course slightly alkaline. If another has a pH of 8.2 it is more alkaline than the one of pH 7.6. It is, therefore, clear that an acid, such as hydrochloric, or an acid salt, such as alum, must be added to a solution of pH 8.2 to bring it to a pH of 7.6, and that larger quantities must be added to bring it to the neutral point of 7.0, or to an acidity of pH 6.6, 6.0, etc. Similarly, if a solution has a pH of 6.0 it is acid and it is necessary to add alkali, such as lime, soda ash, etc., to it in order to bring it to the neutral point of pH 7.0. Larger quantities of alkali must of course be added to bring it to an alkalinity of pH 8.0, 9.0, etc.

"In order that the worker may have some idea of the degree of acidity corresponding to various pH values, it may be stated that a solution which has a pH value of 5.0 is ten times as acid as one with a pH of 6.0 Analogously, a solution of pH 4.0 is ten times as acid as one of pH 5.0. Thus pH 4.0 indicates an acidity one hundred times as great as pH 6.0. A similar relationship holds on the alkaline side of the scale, that is, a solution which has a pH of 9.0 is ten times as alkaline as one which has a pH value of 8.0, etc. This control method has been so widely adopted that the pH values which should be maintained in many processes have been definitely determined.

"Since the significance of pH values and the means for changing a solution from one pH value to another have been explained, all that is required for a worker to know is how to make the actual determinations.

"The principle of making pH measurements is based on the fact that various indicators change in color when they are acted upon by solutions of different acidities of alkalinities. Litmus paper is probably the simplest and the best known example of an indicator. Its color change is from red to blue. That is, if litmus paper is dipped into an acid solution, it turns red. If it turns only slightly red, we say the solution is 'slightly' acid. Similarly, if the paper turns blue, we say the solution is 'slightly' or 'strongly' alkaline. These are very vague and indefinite terms and their meaning varies enormously, depending largely on the personal opinion of the worker. Thus, what is 'slightly' acid to one worker might be considered as 'strongly' acid by another, and vice versa.

"In making pH measurements, we substitute definite pH values, such as 3.0, 6.0, 7.4, 9.6, 13.0, etc., for the indefinite terms 'strongly' and 'slightly' acid and alkaline. These pH values can be recorded and can be duplicated at any time by the same or different workers.

"The La Motte Chemical Products Company of Baltimore, Maryland, has a set of Bromthymol Blue color standards consisting of nine tubes, containing five cubic centimeters each of solutions which represent definite pH values. A worker equipped with a set of such standards plus a few days of instruction, becomes very efficient in determining the pH of any solution by the use of the La Motte permanent Color Standards. A book, the A, B, C of pH (hydrogen ion) control, is published by the same company and explains in a very understandable way the entire technique for determining the hydrogen ion concentration of any solution. Those of you who have had training in clinical laboratory work would find this text of value to you in your work.

"The degree of ketosis and pH concentration show a very close relationship between these factors and the sterilization of the urinary tract. It is very desirable, therefore, to measure the ketone content of the urine from day to day. Without such evidence as to the degree of ketosis one cannot rigidly judge the effectiveness of the diet or of the results in any case." . . .

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VII, No. 12, November, 1909

From Some Editorial Notes:

The State Board of Health.— . . . When town governments come to a full understanding of these principles, when corporations learn that their fulfillment is an economic investment, when boards of trade realize that the health of their community is their best card, we can expect results which will be little short of marvelous. In this work the State Board of Health expects the help of every physician; a strong, active support, not a passive sympathy. It is often the case that the individual physician does not realize what a power he can exert in his own community and his influence is never greater than when it concerns questions of the public health.

* * *

Explanation and Thanks.—Since July the editor has been unable to do any work on the journal. In that month he met with an accident which resulted in a fractured skull, and strict orders not to attempt to do any work for at least two or three months. As he has led a rather active—if not at times strenuous—life for some years, this enforced idleness was decidedly irksome. Nevertheless, it was quite evident that nature would enforce the orders of the surgeons, and so he has not attempted to do very much. But misfortune is not always unmixed with compensation. Friends appeared at once, and they were of the real sort. The Publication Committee, largely through the very kindly offices of Doctor Lartigau, took entire charge of the journal and they have done everything in the matter of preparing copy, editorials, etc., and seeing that the journal was properly made up each month. . . .

* * *

The Extent of Squirrel Plague.—Last month the journal commented upon the prevalence of plague among the ground squirrels of Contra Costa and Alameda counties and the efforts which were being made by Dr. W. C. Rucker of the Public Health and Marine Hospital Service and his small corps of assistants to eradicate it. . . . About one per cent of all squirrels examined at the laboratory are infected. Doctor McCoy, who has charge of this work, believes that the disease has existed in these regions for a long period. It is problematical just how far down the coast the infection extends, although it may be added that plague squirrels have been found in all counties in which an extensive search has been made. . . .

From an article on "Postoperative Phlebitis" by Charles G. Levison, M. D., San Francisco.

To have assured a patient that a proposed operation is free from danger, and then to find after its performance that the individual is invalided perhaps for months, is an experience that must cause the greatest concern to any surgeon, and yet it is an experience not infrequent when phlebitis intervenes as a complication. . . .

From an article on "The Medical Side of Headache" by J. Wilson Shiels, M. D., San Francisco.

All headaches are complex and obscure. We have little exact knowledge of the structures wherein pain is felt. We do not know what pain really is. Clinically we desire to believe that the consciousness of pain must be related to the activities of certain nerve cells in the cortex. . . .

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and new members.

(Continued in Front Advertising Section, page 18)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

By Charles B. Pinkham, M. D.,
Secretary-Treasurer

News Items

A thorough investigation by the Board of Medical Examiners of the alleged "baby sales," reported by the Department of Social Welfare to the Governor, has failed to disclose any evidence of such sales. At a regular meeting of the board, the following official statement was released to the press:

"A communication recently addressed to the Governor charged that babies were being sold or exchanged by doctors. The consideration being, it was stated, that a person desiring a baby, pay the hospital and doctor's bills.

"Since that time the charge has been thoroughly investigated by the Board of Medical Examiners. Without commenting upon doctors practicing any other form of the healing art and not under jurisdiction of the Board of Medical Examiners, it may be stated that our investigators found that no doctor of medicine was in any way involved in such practice.

"We have invited the public, as well as the Department of Social Welfare, to provide us with information concerning any licentiate of this board, and if we received any legitimate complaint against any doctor of medicine, are prepared to exercise immediate disciplinary measures."

The following officers were elected for the ensuing year: William R. Molony, M. D., president; Clark L. Abbott, M. D., vice-president; Charles B. Pinkham, M. D., secretary-treasurer.

At a regular meeting of the Board of Medical Examiners held at the State Capitol, Sacramento, October 15 to 18, inclusive, the following changes in the status of licentiates was made:

Robert V. Baker, M. D., Avalon. License revoked October 16, 1934, based on narcotic charges.

Thomas O. Greig, M. D., Berkeley. License revoked October 17, 1934, based on violation of the terms of his probation imposed October 22, 1930.

John R. U. Campbell, M. D., Dunsmuir, was placed on five years' probation October 16, 1934, without narcotic privileges.

Arthur M. Nelson, M. D., Los Angeles, was placed on five years' probation October 16, 1934, without narcotic privileges. (According to resolution of the Board, Doctor Nelson cannot apply for restoration of narcotic privileges until three years have elapsed.)

James W. Nicholson, M. D., Porterville, was placed on five years' probation October 17, 1934, after hearing of charges of alleged intemperance.

John Marshal Robinson, M. D., Los Angeles, was placed on probation on October 17, 1934, for a period of five years, without narcotic privileges. (The Board voted he will not be entitled to apply for restoration of his narcotic privileges until three years have elapsed.)

Rudolf Rohlfing, M. D., whose license was revoked October 19, 1933, was on October 17, 1934, restored to practice and placed on probation for a period of five years.

Roy F. Ruth, M. D., Los Angeles, whose license was revoked October 19, 1933, was restored to practice on October 17, 1934, and placed on five years' probation without narcotic privileges.

Forty-three graduates of medical schools took the written examination, of which number several were graduates from foreign medical schools, the majority being from Germany.

* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

(Continued in Front Advertising Section, page 21)

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as *STANDARD* in Radiothermy EQUIPMENT

ULTRATHERM
Six meters; output in patient's circuit, 250 watts. Operated on normal alternating current power source.

AMERICAN practitioners accept ADLANCO Radiothermy Equipment for its background of research and practicability . . . a product of Europe's foremost minds skilled in treatment by ultra-short wave radiothermy.

ADLANCO Radiothermy apparatus, in various styles and sizes to meet today's needs, combines efficiency and economy. Radio ultra-short wave, from 3 to 10 meters, offers the simplest means of obtaining positive thermic depth effects . . . quickly, and satisfactorily for patient and practitioner alike. Even cases of acute inflammatory, septic and suppurent types, ordinarily **contra-indicated** for diathermic application, indicate treatment by ultra-short radio waves.

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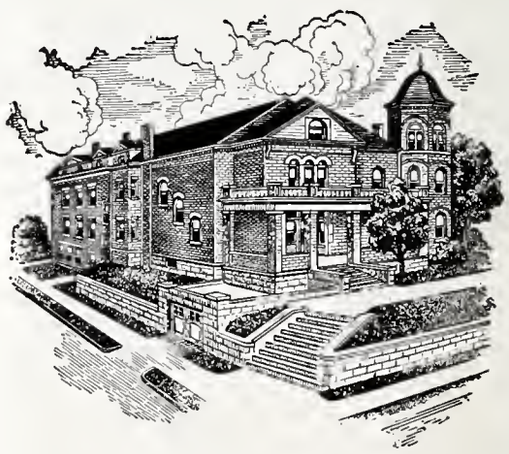

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For the Treatment of Tuberculosis

DR. FREEDLANDER *will also be associated with* DR. SCHEIER *at the San Francisco office,* 516 Sutter St.

TELEPHONE DOUGLAS 4486

(Continued from Page 31)

present writer," says the author, "and covering many years of studies with animals, shows that pasteurized milk, milk powders and evaporated milks, are essentially the equivalent of raw milk in nutrition. The differences between them is not sufficient to warrant serious consideration."

Current Production and Consumption of Milk. Editorial, *Journal of the American Medical Association,* 103:841, September 15, 1934: The apparent overproduction of milk today is found, upon analysis, to be really an underconsumption of this important food. The importance of milk in the dietary has been emphasized by numerous investigators and is supported by medical and public health authorities. If consumption were adequate the present "oversupply" would soon be inadequate. Economic aspects are as important as the public health aspect in providing an annual minimum cost adequate diet of 260 quarts of milk per capita, instead of the 191 quarts now consumed.

Two's Company, Three's a Crowd.—"Sickness is a matter intimately personal. It is a time when sincerity of dealing cannot be compromised nor human feelings flouted.

"How disturbing, then, is the thought of having a third person or alien party exercise an influence on the relationship between the patient and his physician, the two persons who, above all others, are most vitally concerned when sickness enters the home.

"Yet this third party influence, with all its unpleasant and disturbing sequels, will inevitably be thrust upon patient and physician should some of the current new schemes of medical practice ever gain acceptance.

"Carried to their full development, such plans would mean that your family doctor would be the hireling of a commercial organization or of a department of the state, the former built up necessarily by business

(Continued on Next Page)

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ANTISEPTIC DRESSING

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Antiseptic, Anodyne, Analgesic, Anti-Escharotic, Nontoxic, Deodorant.

Each lot tested bacteriologically according to Department of Agriculture, Drug and Food Control, "Methods of Testing Antiseptics," (George F. Reddish, Ph.D.), Jour. Lab. and Clin. Med., April, 1929, by Mona E. Bettin, M.D., Pathological Laboratory, Los Angeles.

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(Continued from Preceding Page)

promotional efforts, high pressure salesmanship and price competition, the latter made compulsory by legal enactment.

"Experience has already shown that contract or insurance schemes would not be successful if they observed carefully the principles of conduct and fair competition which operate as definitely for the public good as for professional honor. In these principles financial gain is subordinated to the prime object of service to the patient and to humanity.

"Furthermore, the history of some of these ventures reveals highly deplorable tendencies. "Scare head" advertising has appeared as a means of frightening people into subscribing for memberships. Medical service has been promised at ridiculously low and actually impossible rates. The services of

(Continued on Page 38)

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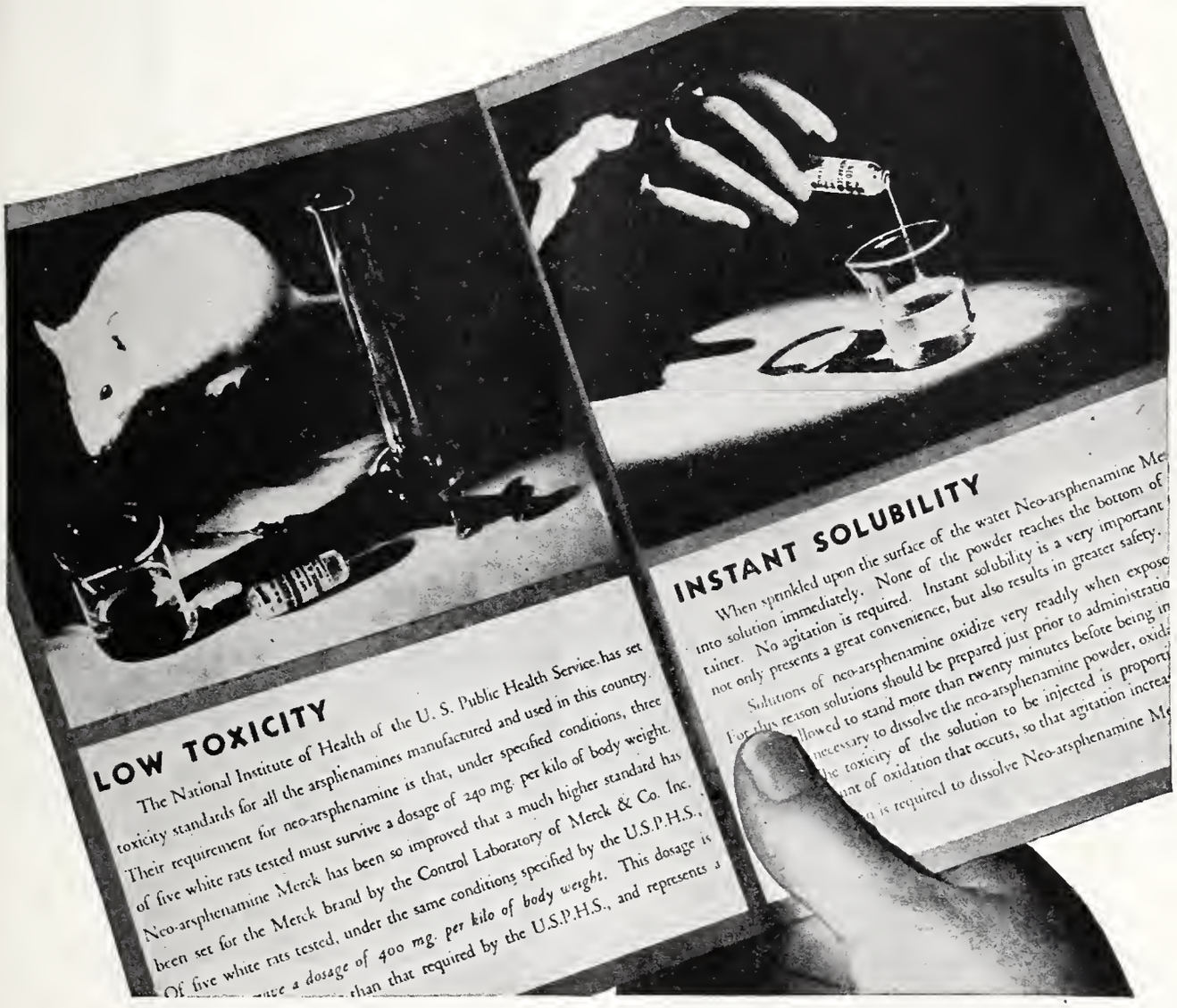

QUALITY is imperative in such an important preparation as neo-arsphenamine. The only real assurance of quality is to use a product bearing the name of a manufacturer who has a reputation to maintain. That undoubtedly explains why a steadily-increasing number of physicians specify "Neo-arsphenamine Merck."

The folder illustrated, explains the superior qualities of the Merck brand of neo-arsphenamine and gives detailed information regarding the preparation and injection of solutions. A copy will be sent on request, together with a few ampuls of "Neo-arsphenamine Merck," so that you may test its "Instant Solubility."

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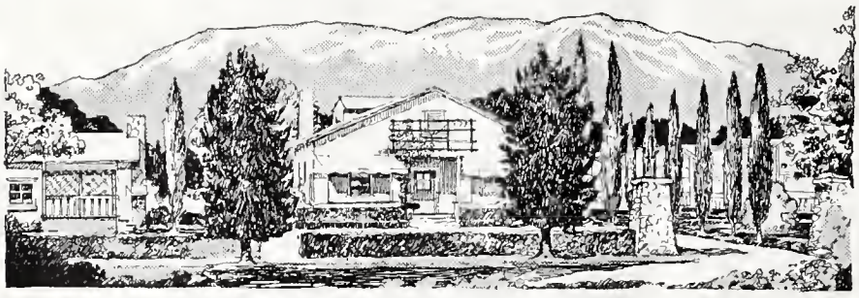

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Doctor: Send your next patient here, and you may feel assured not only that he will receive maximum benefit from his sojourn, but he will be grateful and will thank you for sending him to

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CLARE MEHRTENS, *Director* WILL REBEC, M. D., *Medical Director*

Number of Patients Limited	*Accredited to* AMERICAN MEDICAL ASSOCIATION	*Telephone* BELMONT 111

(Continued from Page 36)

hundreds of physicians have been promised to subscribing members, whereas actually but a small fraction of that number were "signed up" and available. Patients have found that they must be served by the physician assigned to them, not by the man of their choice. And the poorer classes have paid the same price for medical service as the very wealthy.

"No, the fine, sympathetic, humanitarian service at present rendered by the family physician can never be satisfactorily replaced by a commercial organization that retails medical service for a profit, nor by the state with a mechanized or regimented medical profession. The interjection of such agencies between patient and physician is unnecessary and cannot fail to be disturbing to all parties concerned."—From Mead Johnson & Company's Announcement in *Hygeia*, September, 1934.

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VOLUME 41
NUMBER 6

DECEMBER · 1934

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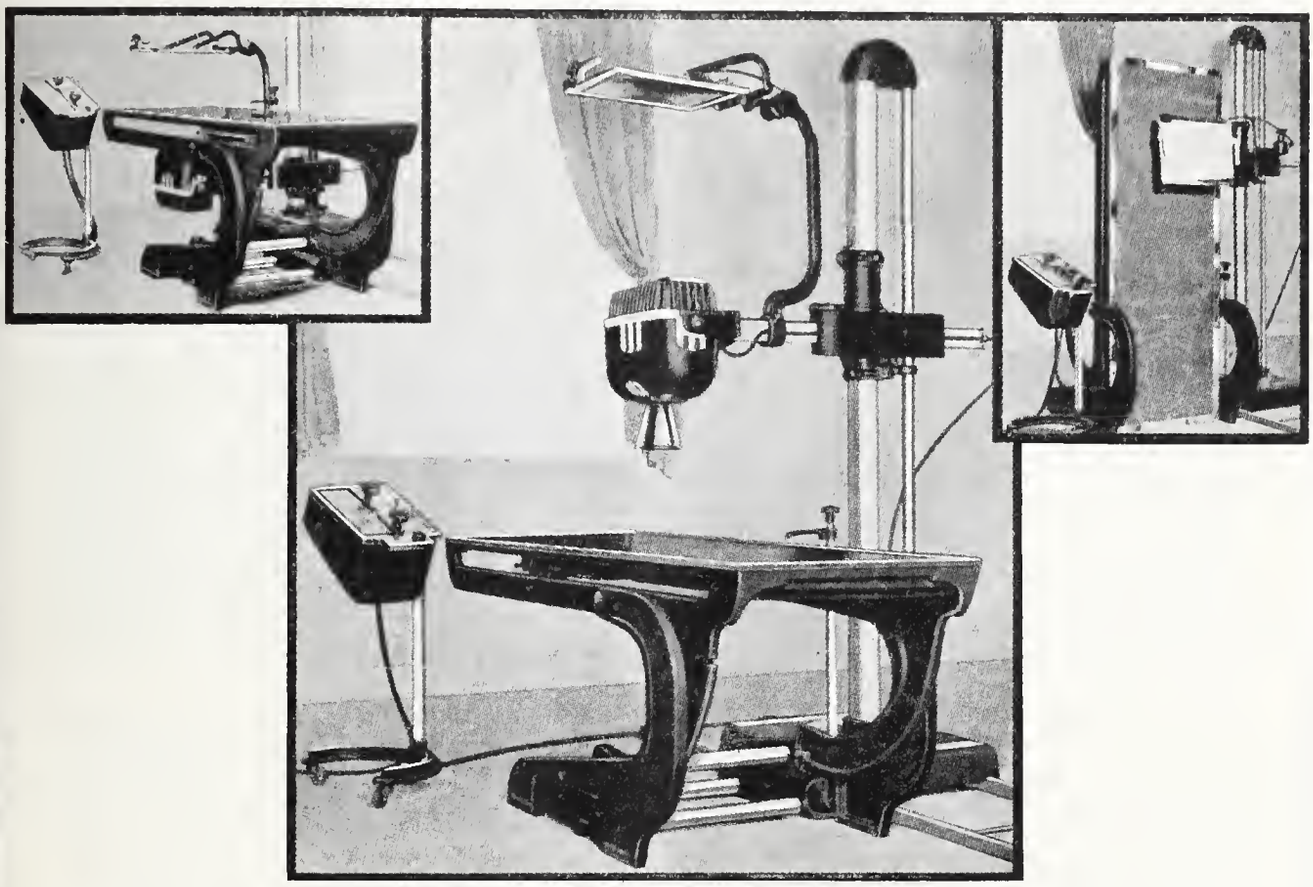

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Miscellaneous California Medical Organizations

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San Francisco—State Office Building, McAllister and Larkin Streets. UNderhill 8700.

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The Public Health League of California

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The Institutions here listed have announcements in this issue of California and Western Medicine. For Index, see advertising page 8.

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Diabetic Manual for Patients. By Henry J. John, M. A., M. D., F. A. C. P., Maj. M. R. C., Director of the Diabetic Department and Laboratories of the Cleveland Clinic. Second edition. Cloth. Pp. 232. Price, $2. St. Louis: The C. V. Mosby Company, 1934.

Synopsis of Genitourinary Diseases. By Austin I. Dodson, M. D., F. A. C. S., Professor of Genitourinary Surgery, Medical College of Virginia Genitourinary Surgeon to the Hospital Division, Medical College of Virginia; Genitourinary Surgeon to Crippled Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic. Cloth. Pp. 275, with 111 illustrations. Price, $3. St. Louis: The C. V. Mosby Company, 1934.

Allergy and Applied Immunology. A Handbook for Physician and Patient, on Asthma, Hay Fever, Urticaria, Eczema, Migraine and Kindred Manifestations of Allergy. By Warren T. Vaughan, M. D., Richmond, Virginia. Second edition. Cloth. Pp. 420. St. Louis: The C. V. Mosby Company, 1934.

Surgical Nursing. By Hugh Cabot, M. D., C. M. G., F. A. C. S., Senior Consultant, Mayo Clinic, Rochester, Minn., and Mary Dodd Giles, R.N., A. M., Associate Professor of Nursing Education, Vanderbilt University. Second edition, thoroughly revised. Cloth. Pp. 441, illustrated. Price, $3 net. Philadelphia: W. B. Saunders Company, 1934.

Maternal Mortality in Philadelphia, 1931-1933. Report of Committee on Maternal Welfare, Philip F. Williams, M. D., Chairman. Paper. Pp. 143. Price, $1. Philadelphia: Philadelphia County Medical Society, 1934.

(Continued on Page 16)

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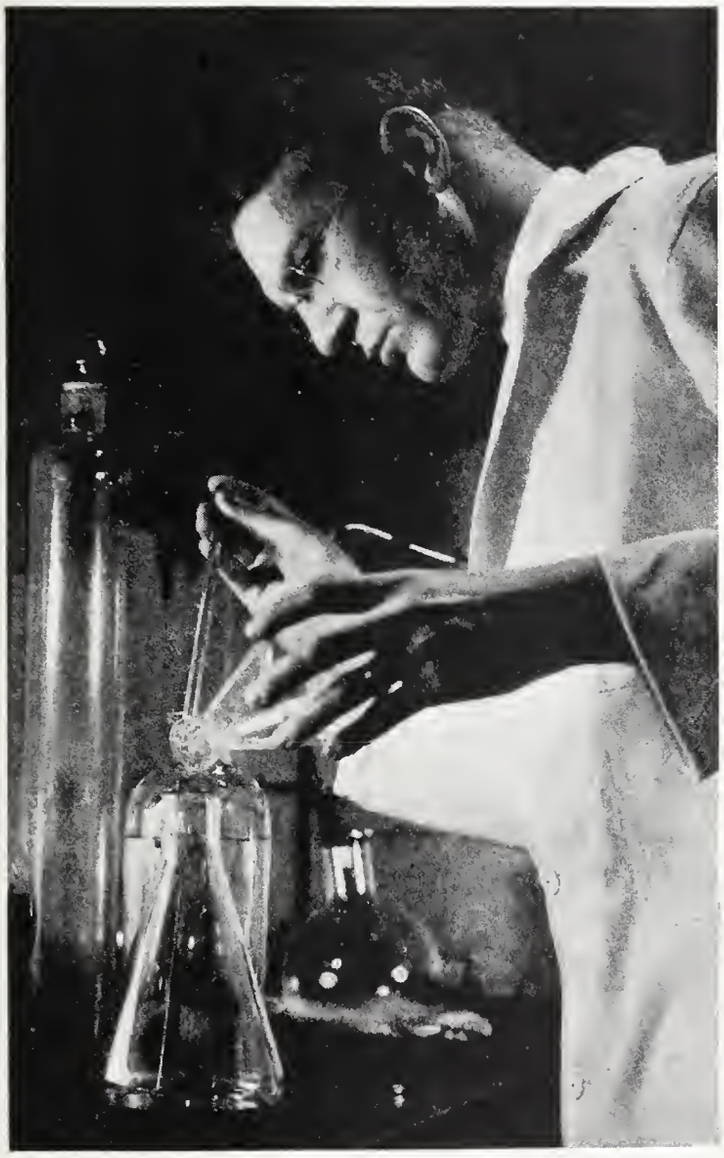

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AMERICAN MEDICAL ASSOCIATION

For the Hospitalization of Psychiatric, Neurasthenic and Addiction Cases

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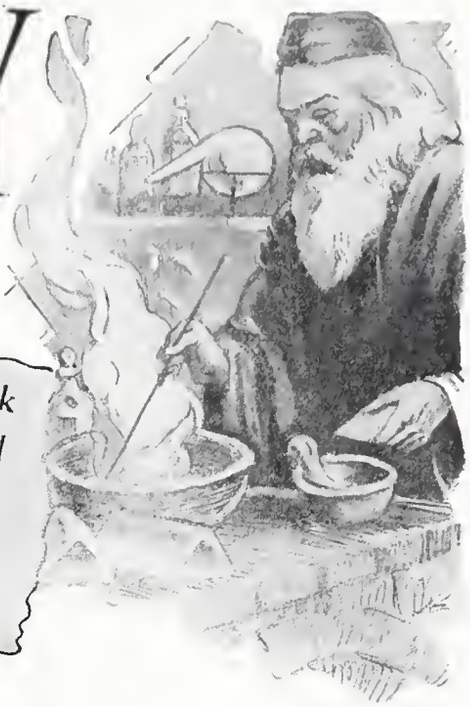

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Brennemann, J., Artificial Feeding of Infants, Abt's Pediatrics, Vol. 2, p. 635

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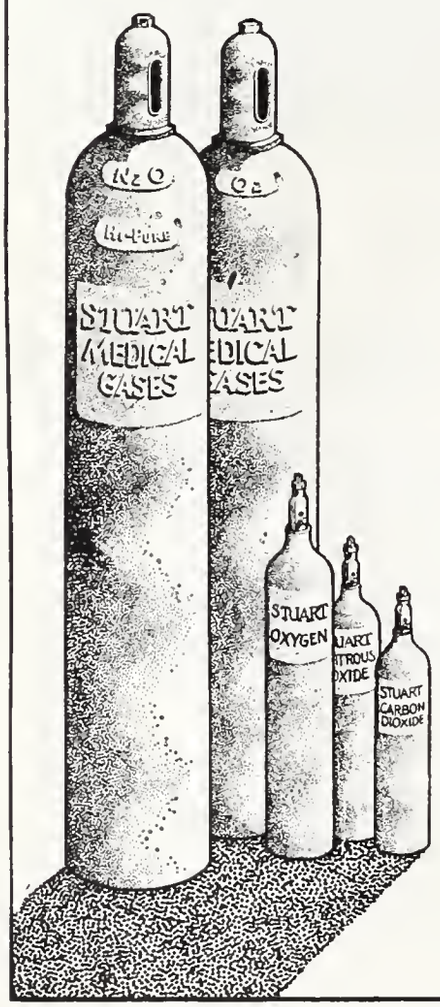

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BOOKS RECEIVED

(Continued from Page 11)

The Farm Chemurgic. By William J. Hale, Ph. D., Research Consultant, The Dow Chemical Company. Paper. Pp. 201. Boston: The Stratford Company, 1934.

United States Naval Medical Bulletin. Published Quarterly for the Information of the Medical Department of the Navy. Issued by the Bureau of Medicine and Surgery, Navy Department. Division of Publications, Commander Louis H. Roddis, Medical Corps, U. S. Navy, in Charge. Compiled and published under the authority of Naval Appropriation Act for 1934, approved March 3, 1933. Paper. Pp. 194. Price, 25 cents. Washington, D. C.: Government Printing Office, 1934.

Developmental Anatomy. A Textbook and Laboratory Manual of Embryology. By Leslie Brainerd Arey, Robert Laughlin Rea, Professor of Anatomy, Northwestern University, Chicago. Third edition, revised. Cloth. Pp. 593, with 547 illustrations, many in color. Price, $6.50 net. Philadelphia: W. B. Saunders Company, 1934.

A Manual of the Practice of Medicine. Prepared especially for students. By A. A. Stevens, A. M., M. D., Formerly Professor of Applied Therapeutics in the University of Pennsylvania; Honorary Consulting Physician to the Philadelphia General Hospital; Consulting Physician to St. Agnes Hospital, Philadelphia. Thirteenth edition, revised. Cloth. Pp. 685. Price, $3.50 net. Philadelphia: W. B. Saunders Company, 1934.

Cataract — Its Etiology and Treatment. By Clyde A. Clapp, M. D., F. A. C. S., Associate Professor of Ophthalmology, Johns Hopkins University; Professor of Ophthalmology, University of Maryland; Visiting Ophthalmologist, Johns Hopkins Hospital and Wilmer Institute; Ophthalmologist, University of Maryland Hospital. Cloth. Pp. 254, illustrated with ninety-two engravings. Price, $4. Philadelphia: Lea & Febiger, 1934.

The Patient and the Weather. By William F. Petersen, M.D., with the assistance of Margaret E. Milliken, S.M. Volume III. Mental and Nervous Diseases. Cloth. Pp. 375. Ann Arbor; Edwards Brother, Inc., 1934.

The Human Machine —Its Uses and Abuses. By Lorena M. Breed, M. D., F. A. C. P. Cloth. Pp. 101. Price, $1.50. Boston: The Stratford Company, 1934.

The Rockefeller Foundation Annual Report, 1933. Paper. Pp. 476. New York: The Rockefeller Foundation, 1934.

Recent Advances in Neurology. By W. Russell Brain, M. A., D. M. (Oxon.) F. R. C. P. (London), Physician to the London Hospital; the Hospital for Epilepsy and Paralysis, Maida Vale; and the Royal London Ophthalmic Hospital; Neurologist to Mount Vernon Hospital; Consulting Physician to the Star and Garter Hospital for Disabled Sailors and Soldiers, and E. B. Strauss, M. A., D. M. (Oxon.), M. R. C. P. (London), Assistant Physician to the Cassel Hospital for Functional Nervous Disorders; Hon. Typological Psychiatrist to Beaford Court Mental Welfare Hospital, Worcester; Hon. Research Assistant in the Department of Psychiatry, some time Senior Medical Registrar, to the Hospital for Epilepsy and Paralysis, Maida Vale. Third edition. Cloth. Pp. 442, with forty illustrations. Price, $5 net. Philadelphia: P. Blakiston's Son & Co., Inc., 1934.

Gynecology. By Brooke M. Anspach, M. D., Professor of Gynecology, Jefferson Medical College. Fifth edition, re-illustrated, reset, and completely revised by the author, with the assistance of Philip F. Williams, M. D., Assistant Professor of Obstetrics, School of Medicine University of Pennsylvania, and Lewis C. Scheffey, M. D., Assistant

(Continued on Page 18)

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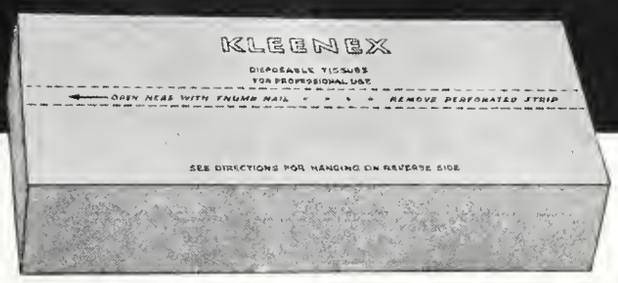

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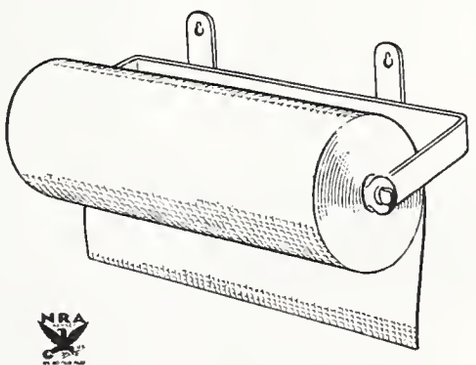

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BOOKS RECEIVED

(Continued from Page 16)

Professor of Gynecology, Jefferson Medical College. Cloth. Pp. 832, with 679 illustrations of which ten are in colors. Price, $9. Philadelphia: J. B. Lippincott Company, 1934.

Minor Surgery in General Practice. By W. Travis Gibb, M. D., Consulting Surgeon, City Hospital and Central and Neurological Hospitals; Formerly Attending Surgeon, Workhouse and Penitentiary Hospitals and Hospital for the Aged and Infirm Poor, New York, N. Y. Cloth. Pp. 429, with 148 illustrations. Price, $5. New York: Paul B. Hoeber, Inc., 1934.

BOOK REVIEWS

Management of Fractures, Dislocations and Sprains. By John A. Key and H. Earle Conwell. St. Louis: C. V. Mosby Company, 1934.

This book, a tremendous work of nearly twelve hundred pages, weighing about six pounds, is one of the most exhaustive treatises on fractures, dislocations and sprains now available. Written by men of broad clinical experience, it is especially valuable as a reference text. The authors state in the preface that the purpose of the book "is to furnish a practical working guide to student, practitioner, and surgeon." However, one could wish it had as a companion volume a brief epitome of from fifty to one hundred pages in which one could find short paragraphic descriptions of approved treatment methods regarding each of the various bone and joint problems as are most commonly encountered in actual practice by the average doctor.

A weakness of American medical publishers is by the inclusion of both text and illustrations of relatively little importance and by printing on heavy paper to produce volumes—ponderous to handle and tedious to read.

The student to whom the field of traumatic bone and joint surgery is as yet relatively unexplored will find in this book a vast array of useful information. For the most part, the opinions expressed by the authors seem to have been well and wisely considered. But in one instance, at least, what seems to be an ill-advised statement occurs—one which, since it tends to perpetuate an already recognized fallacy, may do much harm. On page 524 one reads: "There is no doubt but that in the majority of the cases the venous obstruction and the resultant Volkmann's contracture are caused by the dressing applied by the physician or surgeon." This is an extreme

(Continued on Page 21)

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In behalf of tired mothers, it must be said that the long cooking of ordinary cereals is a drudgery, especially if there also be smaller children who break her rest during the night and clamor for attention before dawn. In most cases, the older members of the family lose out at breakfast time not because the mother is lazy or inconsiderate, but simply because she is exhausted and requires extra rest.

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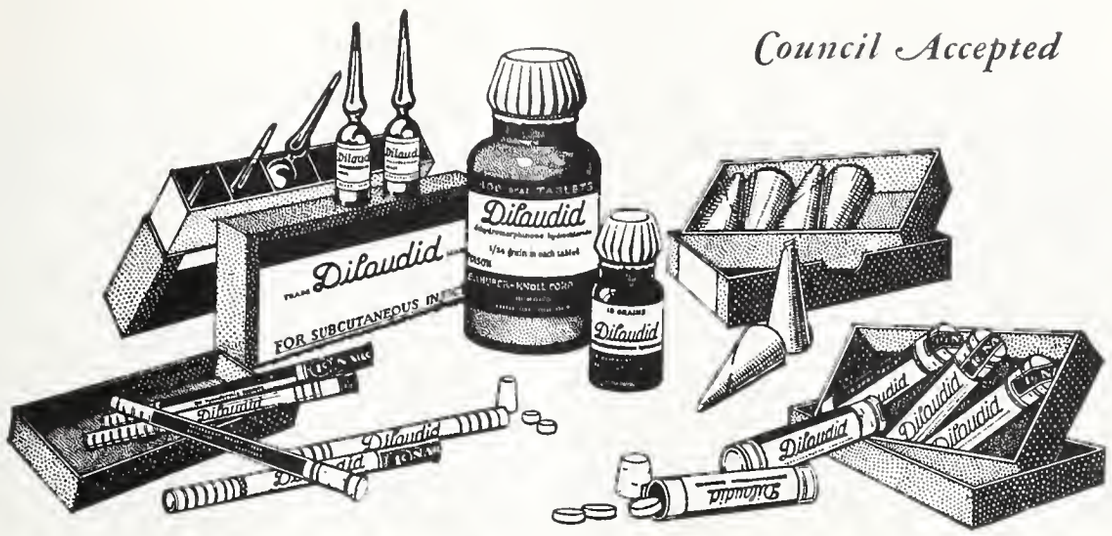

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BOOK REVIEWS

(Continued from Page 18)

statement, the medico-legal implications of which may be serious and misleading. To be sure, the authors refer to the effects produced by primary trauma, but not in such a way as to qualify safely the foregoing affirmation. If it were to be accepted as authoritative, such a statement might be the means of sustaining an unjust damage claim against a doctor who was not at all at fault. Doubtless, the authors considered it a fact too obvious to be mentioned that the primary cause of every Volkmann's contracture cannot be blamed upon the doctor since this cause lies in the nature and the severity of the original lesion. Furthermore, as every bone and joint surgeon knows, if he has had sufficient experience, Volkmann's contracture may result directly from the primary trauma to the venous circulation, where no circular dressing has been applied, and even when complete extension at the elbow has been maintained.

E. W. C.

Tuberculosis in the Child and the Adult. A discussion of pathologic anatomy, pathologic physiology, immunology, diagnosis and treatment. By Francis Marion Pottenger. Pp. 611. Illustrated. St. Louis: The C. V. Mosby Company, 1934. Price, $8.50.

Having been prepared as a reference work to be used both by the general practitioner and the specialist in lung diseases, this book covers almost every phase of the tuberculosis problem. It is a readable volume, the material being presented in a clear and simple style. On the whole, the book seems to achieve its purpose satisfactorily.

Graphically illustrated by roentgenograms and charts, the chapters on tuberculosis in the child are of particular interest, the author having set forth clearly in these chapters his views about the difficult problem that concerns the development of the mechanism of protection. Considerable space is devoted also to the discussion of visceral neurology, a subject about which the author is well qualified to express himself. In regard to diagnosis and treatment, the ideas advanced are those now generally entertained by phthisiotherapists; and these ideas are so well indexed that the various special suggestions can be easily located.

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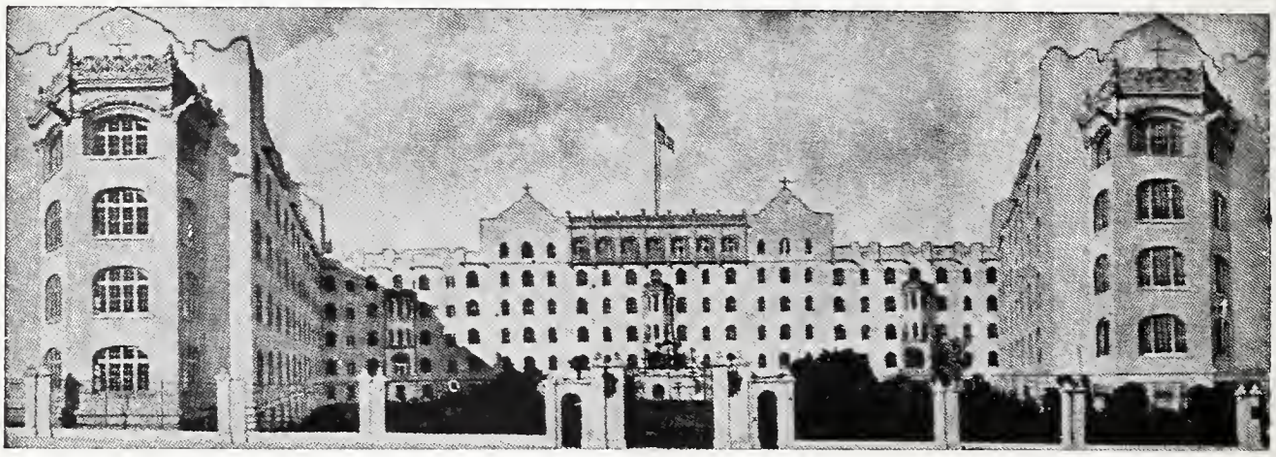

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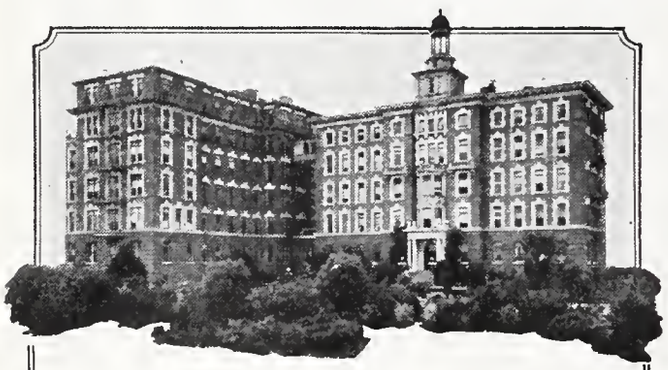

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TWENTY-FIVE YEARS AGO

(Continued from Text Page 432)

University of the Pacific organized this medical department on December 6, 1858, with but four professors, who divided among themselves the ten subjects then comprising the whole field of medicine and surgery.

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Dr. E. S. Cooper, Professor of Anatomy and Surgery.

Dr. J. Morison, Professor of Pathology and Practice.

Dr. Isaac Rowell, Professor of Materia Medica and Forensic Medicine.

Dr. R. Beverly Cole, Professor of Obstetrics and Diseases of Women and Children, Physiology, and Chemistry.

It is a tradition that these four physicians, having at first no students, lectured to each other for a time to acquire facility of technical speech and greater familiarity with their several subjects. . . .

From an article on "Three Non-Tuberculous Joint Lesions" by James T. Watkins, M. D., San Francisco.

The three patients I am about to present are sufferers from three different forms of nonspecific joint lesion. By nonspecific I mean non-tubercular and non-syphilitic. It is a convenient rather than a scientific differentiation. . . .

From an article on "Railway Hygiene" by T. C. McCleave, M. D., Berkeley.

It is with great pleasure that I welcome you to this seventh annual meeting. The affairs of the Society have prospered during the year. Some thirty new members have been added to our rolls, and considerable interest has been manifested in our work. . . .

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BOARD OF MEDICAL EXAMINERS

(Continued from Text Page 432)

by Municipal Judge Arthur Crum to pay a $200 fine, with the alternative of serving one hundred days in jail. Monasterio gave notice of appeal and posted a $500 appeal bond." (Los Angeles *Illustrated Daily News*, October 31, 1934.)

"W. Maynard LuKasky was found guilty yesterday afternoon by a jury in Department 2 of the Municipal Court on a charge of practicing medicine without a license, in violation of the State Medical Practice Act. . . . It was the second trial of LuKasky on the Medical Practice Act. He was tried several months ago before a jury and Judge Charles D. Wallace, and found guilty on all the counts. He took an appeal to

(Continued on Next Page)

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the Appellate Department, which ordered the defendant be given a new trial. . . ." (Long Beach *Sun*, October 30, 1934.)

"Dr. Mae Wilson, prominent woman physician (osteopath) was at liberty on $1,000 bail today, awaiting trial in Superior Court on charges of performing an illegal operation on a young woman who afterward died." (Los Angeles *Evening Post*, November 1, 1934.)

"A murder charge was filed yesterday against H. V. Knowles, forty-three, self-styled 'laboratory technician,' in connection with the death of Mrs. Agnethe Bodholdt, thirty-one, of Oakland, an expectant mother, who succumbed, police say, as the result of an illegal operation. Knowles denied performing an abortion on Mrs. Bodholdt, but admitted, according to Police Inspectors James Goodnight and L. M. Jewell that he examined her on two occasions with instruments. . . . According to Bodholdt, his wife, an expectant mother, visited Knowles twice and after the second visit peritonitis developed. . . ." (Oakland *Tribune*, October 21, 1934.)

"'Dr.' Orlando E. Miller, self-styled psychologist, was convicted yesterday in Federal Court on five counts, charging fraudulent use of the mails. He was sentenced by Federal Judge Harold Louderback to serve three years on each count, but the sentences were modified by allowing three of them to run con-

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currently, so that the term in prison will be six years. Probation was denied. . . . In the days of his ascendency, Miller lectured to large audiences on health, culture and spiritual development. At one time he undertook the organization of a Utopian colony to locate in Mexico, then he promoted the Rellimeo Film Syndicate, which brought him into conflict with the United States Government because of his use of the mails in recommending it as an investment. This case has been on the records for six years. . . ." (San Francisco *Examiner,* November 9, 1934.) (Previous entries, June, October, November, 1926; March, 1927; March, 1928; December, 1929; July, 1930.)

The records show that H. Matsuuki recently pleaded guilty to a charge of violation of the Medical Practice Act in the Municipal Court of Los Angeles and on September 28 was sentenced to pay a fine of $50 or serve twenty-five days in the city jail.

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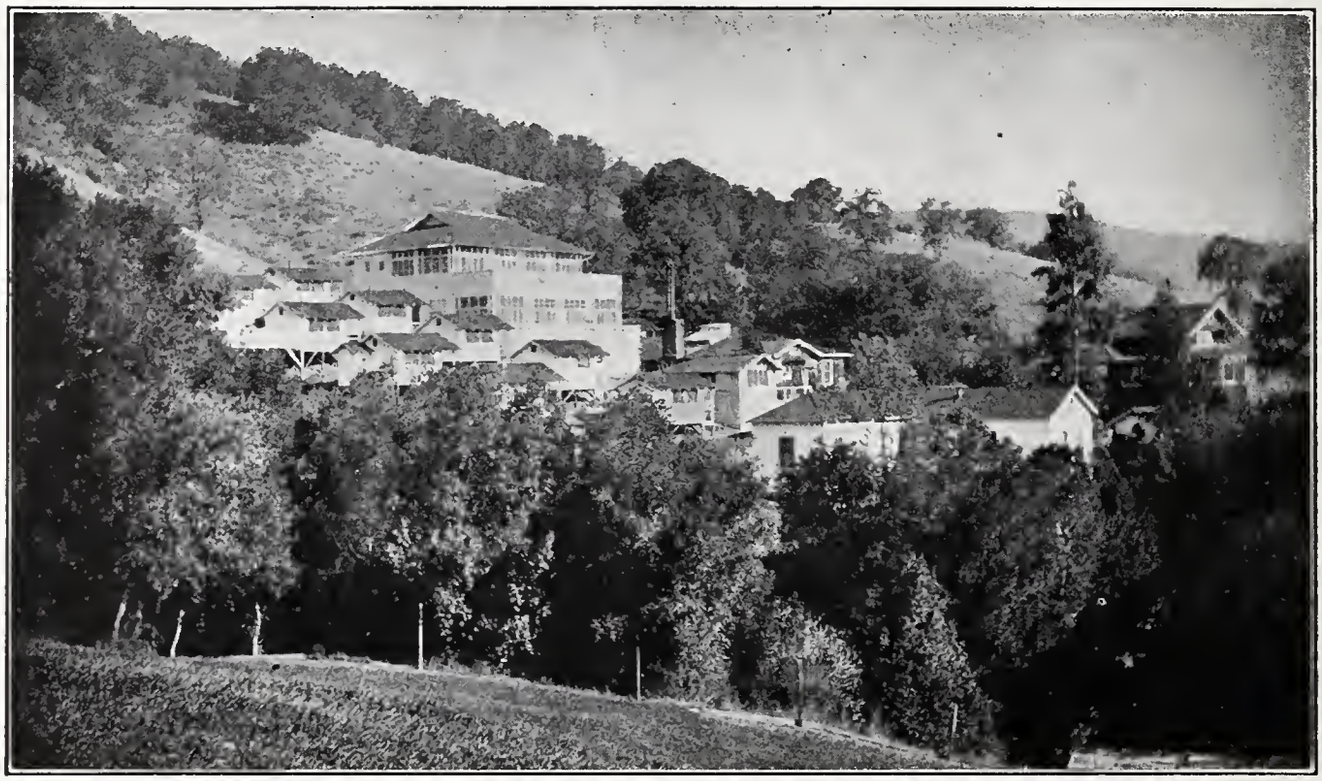

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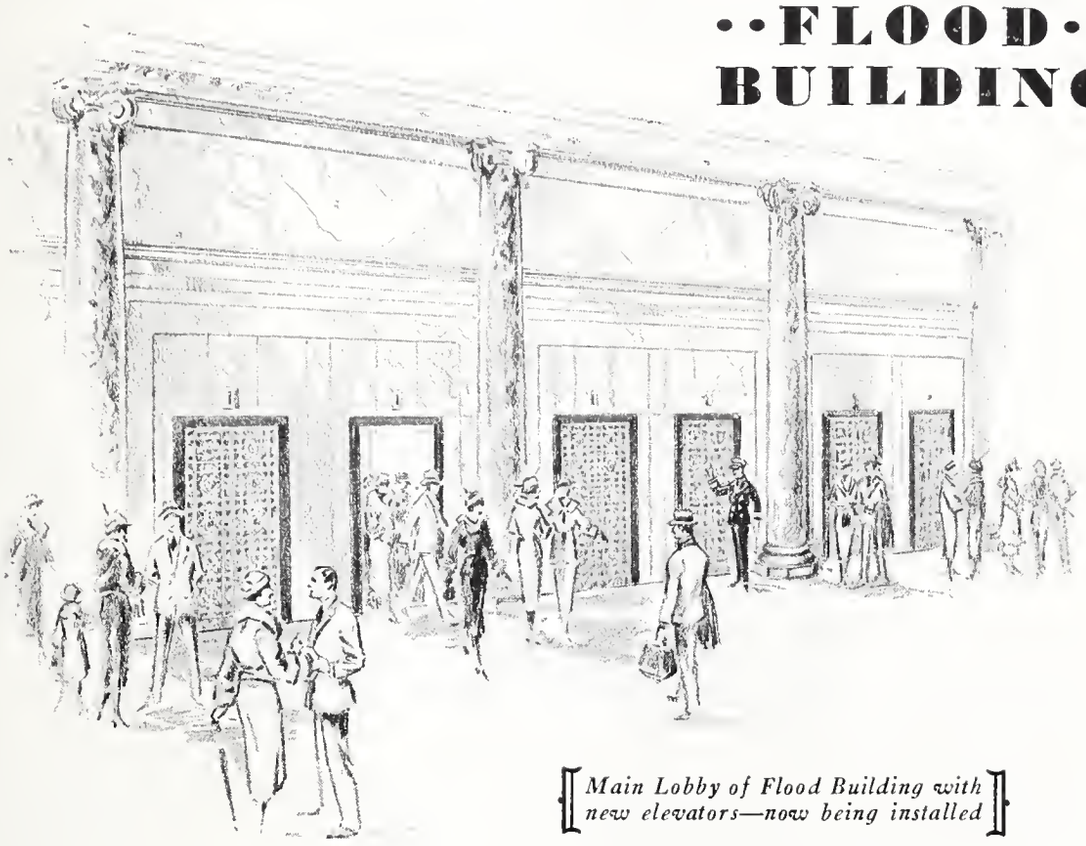

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VOL. 41 DECEMBER, 1934 No. 6

THE COMMON COLD*

By K. F. MEYER, Ph. D.
San Francisco

DISCUSSION *by Francis Scott Smyth, M. D., San Francisco; George Piness, M. D., Los Angeles; William J. Kerr, M. D., San Francisco.*

ONE approaches a discussion of this subject with a great deal of trepidation, for various reasons. First, because the splendid little book "Our Common Enemy: Colds," by the editors of "Fortune in Consultation with Eminent Physicians" (Robert M. McBride and Company, New York, Third Edition, 1934), has already cleared up a world of misinformation. In a most readable style, it presents a controversial subject and discusses the means to prevent and cure a cold. Vaccination receives benevolent sanction, ultraviolet rays and chlorin are treated with justified skepticism, while changes in diet are critically analyzed. Secondly, it is impossible for one mere mortal to review the rapidly increasing and scattered literature on the subject; and, thirdly, an epidemiologist is obviously not qualified to condense in a short communication the most important facts which may serve as guides for future researches. However, a humble attempt is herewith made.

ACUTE RESPIRATORY DISEASES A LARGE FACTOR IN MORBIDITY AND MORTALITY RATES

No one will deny that the acute respiratory diseases assume a most important position in the morbidity and mortality rates of any civilized community. This is particularly true since medical science has so far failed to contribute an effective method either of prophylaxis or cure. Although of world-wide distribution and common occurrence, the common cold has only in recent epochs attracted attention. Consequently, the information as to the actual prevalence in different parts of the world, and at different times, is quite meager. It is admitted, and in part substantiated by observations on selected groups, that the tendency for recurrent attacks—on the average two per person per year in a temperate climate—induce, in the aggregate, a tremendous loss in working time and efficiency of a population. Statistical data are difficult to collect on account of the inherent uncertainty of distinguishing between the common cold, a mild attack of influenza, a sinusitis or an allergic rhinitis. By common agreement, a mild respiratory catarrh is reported as a cold, while a more severe attack with fever is called influenza. Yet, an epidemic of a severe respiratory infection is quite generally designated as influenza. The relationship of pandemic influenza to annual or interepidemic influenza is by no means clear, and must by necessity encourage confusion. Various irritants, such as dust, chemical fumes, smoke, pollens, etc., can cause an acute catarrhal condition of the nose. This type of "cold" is, as a rule, described as an allergic, vasomotor rhinitis or perennial hay fever. A great deal of detective work is necessary properly to diagnose and identify these conditions. Such a state of affairs complicates the collection of accurate epidemiologic data. One is justified, therefore, in making the bold statement that the "common cold" recognized in medical practice is certainly not a definite single disease. Experience has taught that the most frequently observed colds are contagious, and thus differ from the allergic catarrhs which are nonorganismal and noninfectious.

RECENT EVIDENCE CONCERNING THE INFECTIOUSNESS OF "COLDS"

What recent evidence has been presented to prove the infectiousness of a cold? Heinbecker and Irvine-Jones (1929), during a trip up the west coast of Greenland, noted that in certain of the settlements every native was the victim of an acute respiratory tract infection, while in others no evidence of such infection was present. Careful surveys revealed that, in the former, some contact had invariably been made with the outside world prior to their coming, while in the latter group, within from forty-eight to seventy-two hours after their arrival, all the natives developed acute respiratory disturbances with sneezing, coughing and spitting. Farther north, among the polar Eskimos, where it was certain that no outside contact had been made during that year, there

* From the George Williams Hooper Foundation, University of California, San Francisco, California.

Read before the Pediatric Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

was never the slightest evidence of acute respiratory tract disease at the time of the arrival of the expedition, but within seventy-two hours nearly every Eskimo of the settlement developed such a malady. Epidemiologic investigations by Burky and Smillie (1929) in southern Alabama and in Labrador, and by Milani and Smillie (1931) on the Island of St. John (U. S. Virgin Islands, West Indies), indicate that the colds with the customary nasopharyngeal picture are infectious, and spread by direct contact with an incubation period of one to three days. However, the latter investigators present evidence which strongly incriminates environmental influences—for example, a drop in atmospheric temperature—as predisposing, if not inciting, factors in the causation of acute colds.

In a series of illuminating experiments on human volunteers housed during the period of observation in a room in which the temperature and humidity were carefully controlled, Kerr and Lagen failed to secure evidence that the common cold is transmissible. Neither intimate contact with individuals suffering from a cold, nor the direct instillation of his unfiltered nasal secretions, conveyed the disease from man to man. These and other observations should caution us not to accept unconditionally the infectiousness of the common cold. A study of the predisposing factors along physiological lines is obviously indicated.

A chance observation by Long, Bliss and Carpenter, in connection with their studies on respiratory infections in chimpanzees, indicates that the common cold is transmissible during the incubation period. Under carefully controlled conditions, two of nine apes developed typical colds following contact with an attendant who was late in the incubation stage of a common cold. These reports, together with those of Jordan, Norton and Sharp, and Winholt and Jordan and previous observations, amply confirm the general epidemiologic evidence that one group of "colds" is contagious or infectious.

POSSIBLE NATURE OF THE INFECTIVE AGENT

However, concerning the nature of the infective agent, no agreement has as yet been reached. Two possibilities are mentioned, and evidence in favor of *bacterial* and *virus colds* has been presented. It appears profitable to investigate the intimate relationship between pathogens, whether bacteria or viruses, and the upper respiratory tract symptoms.

1. *Bacterial Colds.*—After the discoveries by Pasteur and Koch, attention was turned to the bacteriological investigation of the diseases of the respiratory tract including the common cold. The earlier workers believed that colds were caused by various kinds of bacteria such as the Pfeiffer's bacillus, pneumococci, streptococci, micrococcus catarrhalis, Friedländer's bacillus, etc. The controversies as to the cause of pandemic influenza led to the belief that the true disease incitant responsible for this scourge was some invisible filter-passer, and that B. influenza was merely a secondary invader to the virus infection. This idea was soon accepted for the common cold, and it has been the leading conception in the current medical literature. In fact, views which are not in harmony with this conception on the etiology remain submerged. In recent years, however, a number of careful studies have been published. They cast doubt on the virus theory of colds. In fact, they definitely prove that bacteria, in particular B. influenzae and pneumococci, are the primary causes of colds. Independently Webster and Hughes, Webster and Clow, Parks and others in America, and Thomson and Thomson, and Hoyle in England, after careful research extending over several years, both during health and during colds, conclude that these microörganisms are the primary causes of attacks of colds. Persons free of pneumococci, B. influenzae and streptococcus hemolyticus were found, in general, free of coryza, sore throat, influenzal and sinus attacks. During or following an attack, the persons become carriers of the organisms for a longer or shorter period. Boyle found that the attacks were associated with a high incidence of B. influenzae (71 per cent), pneumococci (67 per cent) and short-chained streptococci (48 per cent). Particularly instructive are, however, the lessons to be learned from these careful studies, that it is almost impossible to incriminate any particular organism as a cause of colds until the bacterial flora of a given number of individuals has been thoroughly studied for a period of years, not only during the periods of colds but also during health. It is equally important to stress the fact that the recent studies on a limited number of individuals contradict the mass observations on a large number of persons whose bacterial flora was determined during health and during colds by Noble and Brainard, Shibley, Dochez and Mills, Burky and Smillie, Blackburn, Boston and others. Since they failed to find any material difference in the bacterial flora of the respiratory tract during health or during colds, they either state definitely or infer that the bacteria play the part of secondary invaders. Yet, the most ardent believer in the filterable virus as the sole cause of the highly contagious cold admits that bacterial infections, due to hemolytic streptococci, produce a type of pharyngitis difficult to distinguish from the common forms of respiratory infection.

A CLASSIFICATION OF BACTERIAL COLDS

Parks has shown that in an institution of children, the boys living on one side of the street developed colds and pneumonias, while the girls, who were housed in a separate place, remained free from the disease. A filterable virus would have spread to the other street, but the causative pneumococci did not do so. For the sake of future inquiries, the clinical bacteriologist may classify the bacterial colds in their order of importance as follows:

(*a*) *Pneumococcal Colds.*—These are due to different types of pneumococci; clinically, this type of cold induces a purulent rhinitis frequently complicated with sinusitis, otitis media and pneumonia.

(*b*) *Pfeiffer's Bacillus Colds.*—These are caused by several varieties of this organism. Frequently responsible for a tracheitis and other complications.

(*c*) *Micrococcus Catarrhalis and Streptococcus Colds.*—The frequency and the significance of this type is not definitely established. The etiologic rôle of the green streptococci thus far presented is not convincing. It is claimed that these organisms are capable of causing colds of the copious watery type. Aside from the organisms mentioned, cases have been reported in which the B. bronchisepticus and various other bacteria assumed a significant numerical predominance.

2. *Virus Colds.*—Following the early experiments by Kruse (1914), Foster (1916 and 1917), Dodd (1917), Schmidt (1920), it became generally recognized that certain forms of coryza may be caused by agents present in the Berkefeld N filtrates of nasal washings obtained from patients with acute nasal catarrhs. Subsequently, Olitzsky and McCartney, while studying B. pneumosintes, encountered in the filtered nasal secretion from fresh cases of common colds in man an incitant which produced a definite coryza in some of the volunteers. However, the evidence was by no means convincing, since no controls for the irritative properties of the filtrates had been included. Little progress was made until Dochez, Shibley and Mills accidentally discovered that the "common cold" of man, or something closely resembling it from a clinical standpoint, apparently occurs among anthropoid apes. Thus, they attempted in 1929 to transmit "colds" from human beings to apes by the intranasal injection of filtered nasal washings from human patients. The transmission of colds was successful in about half of the inoculated animals. Very great difficulty was encountered in securing adequate controls on account of the prevalence of colds among the human beings which furnished the nasal washings. They repeated the same experiments during the summer (June and July). In no case did the filtrates from healthy subjects, during this period, give rise to catarrhal or other lesions in the apes inoculated with them. In subsequent experimental series on young chimpanzees, Dochez, Mills and Kneeland reproduced with regularity, by intranasal inoculations with bacteria free Seitz filtrates of nasopharyngeal washings from individuals with acute colds (within twenty-four to forty-eight hours), a definite respiratory disease consisting of sneezing, coughing, nasal obstruction, and mucoid or mucopurulent nasal discharge. The manifestations persisted for five days to two weeks. These experimental infections are communicable by contact to healthy chimpanzees placed in the same cage, and may be passed in series from animal to animal over a period of years. It is of interest that, coincident with the symptoms, various pathogenic organisms, influenza bacillus, hemolytic streptococci, formerly inconspicuous, develop in great numbers and spread over the mucous membranes. In fact, acutely-ill apes may convey these organisms to cage mates readily, while carriers rarely transfer bacteria by contact in the absence of an acute respiratory disease. Experimental transmission of colds on human volunteers revealed the same cycle of events as seen in the chimpanzees. The intranasal instillation of bacteria free filtrates from individuals suffering from acute colds resulted after an incubation time of about twenty-four hours in a typical cold lasting from one to two weeks. Subsequent experiments indicated that the virus of the common cold survives for a considerable length of time after removal from the human pharynx, and that it reproduces itself in vitro when cultivated in the Maitland medium. In a more recent series Dochez succeeded in the cultivation of the virus directly from the nasopharyngeal washings obtained from a patient within twenty-four hours of the onset of a typical acute cold. The culture was passed through seventeen generations, and successfully infected one of three human volunteers.

Long, Doull, Bourn and McComb (1931) experimented along similar lines and succeeded in transmitting the common cold to human subjects by nasal instillations of nasopharyngeal washings obtained from patients suffering from the natural infection. Altogether, twenty inoculations were made from nine subjects with natural colds into nineteen volunteers. Eleven of these tests were successful in setting up colds. The incubation period was twenty to seventy hours; no cold developed after three days. In contrast to the observations of Dochez, these investigators failed to find striking differences between the bacterial flora of the nasopharynx studied during the period of initial quarantine and the period of experimental infection.

A third group of workers (Powell and Clowes, 1931) record a series of experiments carried out on human volunteers with a culture of "common cold" virus that had been carried through thirty-one generations in chick embryo tissue culture medium. Of thirty-two persons injected with the virus culture twenty-two developed colds.

CRITICISMS OF THE EXPERIMENTS

All these experiments have been criticized on the basis that the irritative, perhaps allergic properties of the filtrates were not properly controlled. This is true, since in one experiment a volunteer received an active culture heated for half an hour at 80 degrees centigrade; there appeared symptoms of upper respiratory irritation which, however, lasted only less than twenty-four hours. Doubtless, future experimenters must take these facts into consideration. Another criticism, voiced even more generally, objects to the relegation of the pneumococci, B. influenzae and streptococci to the status of secondary invaders, and the desire to make the etiology of the "common cold" a very simple process. That it is in all probability a complex process is indicated by the observations on animals.

Recent researches into the nature of a disease—swine influenza—resembling the common cold of man have shown that a hemophilic bacillus joins a filterable virus in helping to produce the respiratory disease. Variations in the invasiveness of the bacillus may profoundly modify the clinical course of the disease.

Even if it is recognized that this and other animal respiratory infections are dissimilar to the human cold, Th. Smith (1931) is doubtless cor-

rect when he makes the significant statement: "All species of animals have their respiratory diseases; and it would seem that if this enormous material, involving a variety of hosts and a still greater variety of microörganisms, could be brought together by some master mind synthetically inclined, the cause of human respiratory affection would literally drop into our laps."

The possible existence of filter-passing forms of bacteria must not be overlooked. It is indeed difficult to predict the influence of these newer discoveries on the bacteriology of the respiratory tract. Finally, it must be remembered also that many kinds of bacteria and viruses induce an inflammatory catarrh of the mucous membrane of the intestinal tract. Analogous conditions doubtless operate in the respiratory tract; and although one cannot overlook the important researches of Dochez and others, it is advisable to await further evidence, particularly concerning the mutual relationship of bacteria and viruses in the causation of respiratory disease.

THE "SOIL" OF THE "COLD"

In the etiology of the common cold, the "soil" is just as important as the seed. Future investigations must carefully consider the biochemistry of the blood and the secretions of the mucous membrane. By far, the greatest amount of research has been bacteriological, but the physiology and biochemistry of the patients liable to colds have been neglected. Some individuals have an inborn susceptibility to colds even though they have no nasal defects or late foci of infections. Moreover, an unusual susceptibility towards certain types of bacteria may be noted.

One would like to know more concerning the influence of chilling of the body surface on the ciliary mechanism and the mucous membrane of the respiratory tract, rendering it more susceptible to attack by microörganisms. Statistical, as well as experimental proof clearly show that chilling is a very important predisposing cause. Cold weather increases the chance of infection and, in a community the incidence of colds rises promptly after a sudden cold spell of weather.

Many other factors, including gastric upsets, are doubtless of importance. Poorly ventilated rooms increase the chances of droplet infection; fatigue reduces the general resistance, and anatomical and physiological defects impede the natural self-cleansing action of the nose, and create areas of stagnation well suited for localized microbial growth. The influence of diets and, in particular, vitamins, is by no means clear. Apparently, an abundance of the antirachitic vitamin does not increase the immunity to respiratory infections. There is no evidence that respiratory infections are due to deficiencies in vitamin A. Lack of vitamin C, on the other hand, induces a heightened local susceptibility with marked general loss of resistance.

While common colds are never fatal, the complications and sequelae cause great misery and far-reaching permanent damage. It is unnecessary to stress the disastrous effects of sinusitis, otitis media, mastoiditis, pneumonia, endocarditis, etc. Why certain epidemics of colds give rise to a much higher percentage of these complications than others, is not known.

PREVENTION OF COLDS

The prevention of colds is quite generally directed towards the avoiding of the infection and in guarding against the predisposing causes. The modern conceptions of contact infection have encouraged general cleanliness and hygiene. If carried out faithfully by keeping a patient with a cold in bed and in isolation, this course of action will not only cure the cold but prevent it from spreading to others. This is the only advice which is scientifically justified. Since colds are certainly not definite single diseases, preventive vaccination remains an uncertain procedure. On the other hand, the curative treatment with autogenous vaccine preparations may be beneficial, although it may not be specific. Particularly, the local application of vaccine to the nasal cavities, to the throat and sinuses deserves further consideration.

Hooper Foundation for Medical Research.

DISCUSSION

Francis Scott Smyth, M.D. (University of California Hospital, San Francisco).—Doctor Meyer's discussion of the common cold is excellent. He points with sober consideration to the multiplicity of factors, bacteriological and clinical, which make any single theory untenable. At the present time "the 'common cold,' as recognized in medical practice, is not a definite single disease."

Pediatricians often observe the increased incidence of colds in school children previously carefully sheltered in their homes. The communicable element of colds can be repeatedly verified, yet often a condition very similar, clinically, may be found to be on an allergic basis. We can rejoice in the increased care with which the common cold is now considered, but as Doctor Meyer points out, we are not yet ready to accept a single etiology.

A most frequent failing in medical science has been the ready acceptance of current theories which have been well publicized. Researches, which allow no sweeping conclusions, have been none the less so interpreted by enthusiasts. All too frequently this has led to overstatement, only checked by the inevitable reaction.

George Piness, M. D. (1136 West Sixth Street, Los Angeles).—The etiology of the common cold is still a mystery to us. Many theories have been advanced, but no one of the many researches carried on to date has been able to establish a specific cause for this most ordinary disease. My own interest in the common cold lies in the point of view that many of the so-called colds are in reality attacks of hay fever, that is, allergic vasomotor rhinitis; and it is not beyond reason to think that the statistics of the incidence of the common cold are vitiated by the frequent occurrence of this manifestation of allergy. Its importance, at least to a certain portion of the population, is certainly as great from the point of view of disability as is the true common cold, and it is not out of place to point out at this time some of its characteristics.

The onset is usually sudden in the early morning hours, but symptoms do not ordinarily persist throughout the day. Characteristically there is a free interval during midday, with a recurrence of symptoms at nightfall. The course is usually much more prolonged than that of the common cold, and of course when seasonal in character it is not likely to be confused with the common cold. The symptoms are usually rhinorrhea, sneezing, nasal obstruction, and itching of

the eyes, nose or throat. Epiphora and burning and smarting of the conjunctivae often accompany the above symptoms and, in fact, may replace them. Unlike the common cold, of course, from our knowledge of the nature of the allergic disturbance a hay fever attack is not contagious, and a fever is rarely observed unless bronchial asthma supervenes, which is not unusual, although it is often overlooked because the only symptom of the involvement of the lower respiratory tract may be in the nature of a bronchitis with cough.

The differential diagnosis between common cold and allergic vasomotor rhinitis is simple, if the obvious symptoms are not dismissed without a thorough history and physical examination. The history, of course, will often show a positive heredity of some type of allergy, or a story of some other allergic disturbance such as urticaria, eczema, or asthma. In addition to this an examination of the mucous membrane of the nose and throat shows a characteristic pallid edematous mucous membrane, often accompanied by mucoid and even polypoid degeneration, and lymphoid hypertrophy in the nasal pharynx.

In calling attention to the frequency with which one meets allergic vasomotor rhinitis in practice, we are in accord with Doctor Meyer's statement that the common cold is not a single disease; and we wish to point out that we can separate allergic vasomotor rhinitis as one of the diseases which contributes to the truth of this statement. Doctor Meyer's discussion of the economic implications resulting from the disability caused by the common cold applies with just as great significance to allergic vasomotor rhinitis, particularly in that extensive group of humans whom we now recognize as allergic.

William J. Kerr, M. D. (University of California Hospital, San Francisco).—Doctor Meyer has ably reviewed the prevailing scientific opinion concerning the common cold. The identification of certain clinical states, such as allergic rhinitis, influenza and the common cold, has been difficult, and will remain so until the etiological factors are better known. It should be obvious to anyone that a variety of inciting agents, from without and within the body, may cause a rhinitis resembling a common cold. Since pathogenic bacteria were recognized, attempts have been made to incriminate one or another of the normal inhabitants of the airways, and more recently the ultramicroscopic forms, or filterable viruses, have been suggested as inciting causes alone or in conjunction with bacteria.

Unfortunately, very little attention has been given to the physiological mechanisms of the host, aside from specific immune reactions, during the bacteriological era. If changes in the weather, fatigue, faulty nutrition and other factors making hemostasis difficult are operative, it should be possible to analyze their relationship to the onset of the common cold.

With a view to the study of the circulatory changes occurring in the common cold, Lagen and I have tried to reproduce the common cold so that we could observe the signs during the incubation period, as well as during the various stages of clinical symptoms. We wished to determine in the human being the responses of the heat-regulating mechanisms (skin, kidneys, lungs and respiratory passages) during the progress of the disease.

To date, under carefully controlled environmental conditions, we have been unable to reproduce any symptoms of the common cold by ordinary close exposure of susceptibles to sufferers from the disease, and have not been able to transmit it by direct inoculation of fresh, unfiltered secretions. It is suspected that the filtrates used by some workers are themselves capable of producing a rhinitis, due to the irritating solutions used, which resembles closely a common cold. When we shall have had a sufficiently large series of exposures to satisfy statistical standards, we hope to be able to show that a variety of the disease can be reproduced at will by setting appropriate environmental conditions.

ROCKY MOUNTAIN SPOTTED FEVER AND ENDEMIC TYPHUS FEVER*

AS OBSERVED IN CALIFORNIA

By Edward L. Munson, M. D.
San Francisco

Discussion *by Harlin L. Wynns, M. D., San Francisco; W. H. Kellogg, M. D., Berkeley.*

I. ROCKY MOUNTAIN SPOTTED FEVER

A NUMBER of fevers, of typhus-like character, are distributed over the world. Clinically they are characterized by an abrupt onset, continued fever, a spotted rash, prostration, mental disturbance, and a course of several weeks. There is a serological relationship shown in an ability to give the Felix-Weil reaction, in the production of agglutinins for some strain of Proteus X. Such relationship is further suggested by the fact that the so-called Rickettsia bodies have been found associated in the tissues of infected animals and arthropods. They further resemble each other in having some insect as the transmitting vector; as shown both by laboratory experiment and by the finding of infected insects in nature. Further, with the exception of epidemic typhus, they are diseases primarily of rodents, and are transmitted by insects from rodent to rodent, and accidentally from rodent to man. While various of these typhus-like diseases occur in Japan, Australia, eastern Africa, Malaya, Brazil, and other places, these need not be mentioned here. The representatives of this group within the United States include the so-called Rocky Mountain spotted fever, endemic typhus fever, and epidemic typhus. The two first-named are the subjects of this brief consideration.

ROCKY MOUNTAIN SPOTTED FEVER A MISNOMER

The existence of this disease as a clinical entity has been recognized in this country for half a century. First noted as endemic on the Rocky Mountain plateau, it was given this regional nomenclature. However, the relatively recent discovery of cases in portions of the United States remote from the original endemic area indicates that any such geographical designation is a misnomer.

ETIOLOGY

The etiological agent of the disease is considered to be either the Rickettsia bodies or associated therewith. These are small, intracellular coccoid or bacillary bodies. They have been cultivated in living tissue; but attempts at culture in media free from living cells have failed. The chief reservoir of the infection exists among wild rodents, among which the disease occurs as a mild epizoötic. Squirrels, rabbits, prairie dogs, woodchucks, badgers, and other small animals are susceptible; with ground squirrels and rabbits serving as the most important hosts. The transmitting

*Read before the General Medicine Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

Fig. 1.—Camera lucida drawing of the rickettsiae in a piece of tick muscle. Teased smear preparation Giemsa stained. The tick was proved infected by guinea-pig inoculation.

agents are ticks, of which several varieties are concerned. These transmitting ticks also serve as an arthropod reservoir of the infection. Ticks may be infected in the larval, nymphal and adult stages, and carry the infection through the succeeding stages. The disease is unique among human infections in that the infected female transmits the virus through the egg stage to her progeny. Cattle, horses, deer, and larger animals seem not infected in nature, but are normal hosts for adult ticks and play a large part in the dissemination of the infection.

The varieties of the ticks concerned are the common wood tick, Dermacentor andersonii, which transmits the western type of the disease; the dog tick, Dermacentor variabilis, which is the chief agent outside the western mountain plateau; with less importance attaching to the Pacific Coast tick, Dermacentor occidentalis. The rabbit tick, Dermacentor parumapertus, is infectible; but since it does not readily bite man, its importance probably relates to keeping the infection alive among such rodents.

Because Rocky Mountain spotted fever depends upon ticks for its transmission, the occurrence of the disease will depend upon the distribution of these insect vectors. So far, Dermacentor andersonii has been found to be endemic in the states of Montana, Wyoming, Colorado, Utah, Nevada, and Idaho; in the eastern parts of Washington and Oregon; in the northern parts of Arizona and New Mexico; in the western parts of South Dakota and Nebraska; and in the eastern part of California. Most of the cases of spotted fever in California have occurred in Lassen and Modoc counties, although they also have been noted in Plumas and other counties. The areas adjoining the chief infected area in California are Washoe County in Nevada, and Klamath, Lake, Baker, Crook, and Grant counties in Oregon. Within the wide distribution of Dermacentor andersonii, over an area of approximately a third of the United States, there are many regions in which this tick is present, but in which spotted fever does not occur. And not only is its infection definitely localized in many instances, but there seems to be an extraordinary variation between local virulences, with resultant wide divergence in local case mortality.

In the above respects, climate and season very likely operate as factors. Analysis of the distribution of Dermacentor andersonii and the spotted fever that it transmits, on the basis of meteorological maps, shows that areas of endemicity are sprinkled practically between the annual 50 and 60 degrees Fahrenheit isothermal lines; to be enclosed roughly within an area between latitudes 40 to 47 degrees, and longitudes 110 to 122; under an average annual precipitation of some twenty inches or less; and most commonly found at elevations of from 2,500 to 6,000 feet.

The eastern form of spotted fever is transmitted by Dermacentor variabilis. This tick has been found in all the states of the Union other than those already named. In addition, California, Colorado, Oregon, Montana, and South Dakota report the presence of both species in certain localities. Dermacentor variabilis is closely related to Dermacentor andersonii; has been experimentally proved capable of conveying spotted fever, with cases of fever occurring when Dermacentor variabilis was active; and cross immunity exists between the eastern and western strains—though neither immunizes against typhus. The latter fact removes the tick from suspicion as a possible carrier of typhus. As in the West, the eastern foci of the disease are localized. While the tick is an essential vector, that the presence of the disease in man is affected by some other factor is suggested by the fact that ticks may be locally plentiful, yet spotted fever be absent.

LIFE HISTORY OF THE TICK

Since the bite of the infected tick is the portal of entry for the infection, the life history and feeding habits of the genus Dermacentor become of importance; and especially in the carrying over of the infection from one season to the next. The insect develops through the egg, larva, nymph and adult stages; with the normal cycle of development requiring about two years.

The adult female feeds to engorgement, drops to the ground, lays 2,000 to 6,000 eggs, and dies. The eggs hatch in three or four weeks to several months, depending on temperature. The eggs hatch into six-legged larvae. The larval tick climbs grass or twigs, whence it drops off on a warm-blooded host, presumably a rodent. It feeds to repletion, taking about two to four days. It then drops off, remains dormant several weeks, moults, and becomes an eight-legged nymph.

The nymph crawls into a sheltered place, and goes into hibernation. At the beginning of the next warm season it becomes active, and seeks a warm-blooded host. It feeds to engorgement for

four to eight days, drops off, stays dormant on the ground for several weeks, moults, and becomes adult.

The adult searches for a host, attaches, feeds, copulates. After about ten days to two weeks the female drops off, oviposits, and completes its cycle. If the adult fails to find a host it will hibernate over another winter.

Dermacentor andersonii are three-host ticks, and will feed on practically any warm-blood animal, including man. The immature forms are usually found on small animals, as rodents; and the larger ones on cattle, deer, etc. Many ticks must necessarily not find a host, and ultimately starve to death. But while lack of food inhibits development, ticks can stand long periods of starvation; and adults can live two years or longer without food. Such resistance, combined with the transmission of the virus through all developmental stages, adds greatly to the difficulties of the epidemiological problem.

Not only is Dermacentor andersonii endemic only in areas of considerable climatic similarity, but it is very responsive to the changes of season. It is about the first insect to appear in the spring, is active under comparatively low temperatures, and passes into a period of dormancy during the hot summer period, when other insects present their greatest activity; reappearing with lesser numbers and reduced activity during a relatively brief period in early fall. Its curve of insect incidence is, therefore, a double one. Dyer states that it may appear in Montana as early as February, is most prevalent from the middle of March to the middle of June, and a few can be found as late as September. Professor Herms of the University of California informs me that Dermacentor andersonii in California has its zero of effective temperature at about 35 degrees Fahrenheit in California; and that adults will emerge when the mean daily ranges of temperature are between 38 and 42 degrees Fahrenheit for several consecutive days. He states that the temperature at which dormancy is produced in the fall seems to be about 10 to 15 degrees Fahrenheit higher than that necessary to produce emergence in the spring.

In the East, Dermacentor variabilis usually appears in March, is most prevalent from the middle of May to that of July, and is occasionally found as late as October or November. This tick occurs endemically under conditions of lower elevations and higher temperatures, with a much smaller proportion of human cases. Cold late springs, or very hot, dry summers, greatly retard tick activity; and the latter in turn is the determining factor in the development of spotted fever cases. At high temperatures ticks require considerable humidity, and do not well withstand prolonged dryness. Cold delays development of the immature forms of ticks; but even low temperatures of 50 to 60 degrees Fahrenheit below zero will not destroy Dermacentor andersonii in any stage; nor will it destroy the virulence of the spotted-fever virus. All forms hibernate over the winter season; and this again adds to the difficulties of the epidemiological problem.

RELATION OF INCIDENCE AND SEASON

The controlling relation of season to the occurrence of cases of spotted fever in California is shown by the monthly incidence of the disease for the period of 1917-1933, as follows:

March	8
April	20
May	30
June	18
July	12
August	2
September	1
October	1
November	0
December	0
January	0
February	0
Total	92

These figures show conclusively the period and relative extent to which spotted fever may enter local clinical calculations. With such definite seasonal incidence, for example, the occurrence of spotted fever in the C. C. C. forestry camps of 1934 may logically be expected to be greater than that experienced in 1933; since in the latter year most of these camps were not established until late in June, when the liability to infection had already begun to wane rapidly. But in 1934 the reoccupancy of many of these completed camps will take place in April or early May, at which time the activities of the ticks, and the opportunities for the spread of their infection will be at their maximum.

MORBIDITY STATISTICS

Morbidity statistics as to the occurrence of spotted-fever infection in the United States are probably open to reasonable doubt as to being an understatement. Cases reported are probably those

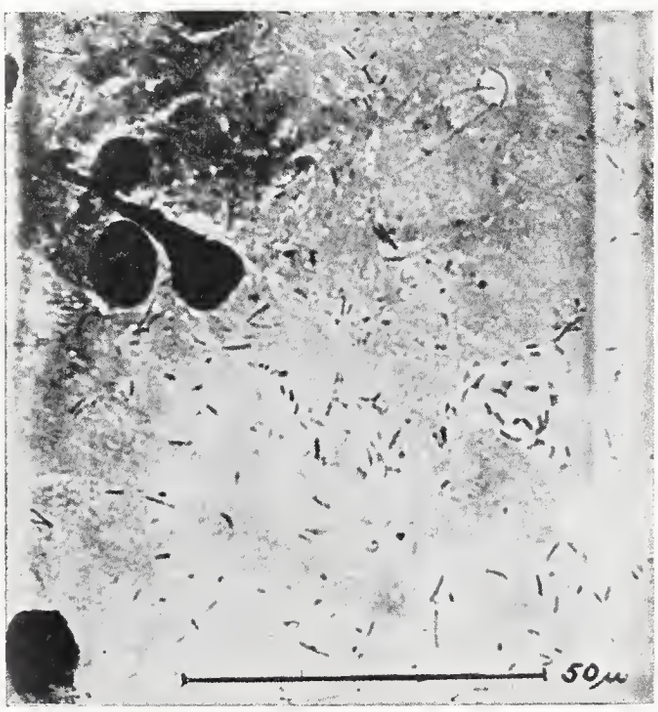

Fig. 2.—Photomicrograph of Giemsa-stained smear of the malpighian tubules of an infected fed adult tick. Rickettsiæ-like organisms associated with the disease are abundant in fed infected ticks and approach the size of ordinary bacteria.

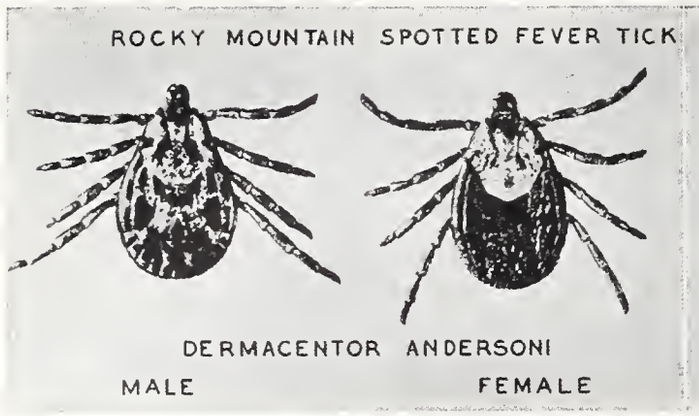

Fig. 3a

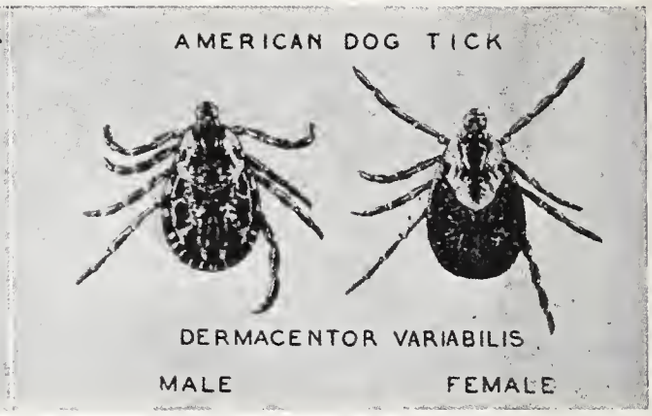

Fig. 3b

which are typical and severe, and permit of definite diagnosis through the presence of the characteristic rash. In spotted-fever infection we have a disease whose local mortality ranges down from 90 to 100 per cent to a complex of trivial and ephemeral symptoms with no mortality whatever, and with no distinctive eruption on which to base a diagnosis. And so far as the number of cases goes, this depends not only on the presence of the infection, and number and activity of the ticks, but upon the number of the population that is under conditions serving to render them ultimate subjects. The areas in the West in which the infection is chiefly prevalent are those in which the population is relatively very sparse and scanty. Dyer estimates that the annual incidence of cases is 500 in the West and 200 in the East; reporting cases from thirteen eastern states whose far greater density of population should theoretically proportionately increase the opportunities for infection.

RELATION TO OCCUPATION

As to the relative hazards of occupation, the following figures for California, based on ninety-four consecutive cases, are suggestive:

Sheep herders	25
Ranchers and ranch-hands	11
School children	11
Railroad section hands	2
Sheep man	1
Mining engineer	1
Geologist	1
Gold miner	1
Traveler	1
Laborer	1
Carpenter	1
Box factory	1
Merchant	1
Occupation not ascertained	36

MORTALITY FIGURES

The case mortality varies from as much as 90 per cent in parts of Montana to as low as 5 to 10 per cent in southern Idaho. There is also a mild form known as "Colorado fever" which is common in Colorado and Wyoming and apparently occurs in the northeast part of this state. But even in places habitually presenting this mild type there may be occasional cases of severe typical infections. Out of 113 consecutive cases reported in California, nineteen, or 16.8 per cent, died. This compares with the eastern mortality resulting from infections by Dermacentor variabilis, which is about 25 per cent, and the high mortality resulting from strains carried by Dermacentor andersonii in Montana. In the case of the latter there is marked difference in the higher brackets. Thus in 55 cases in Missoula County the mortality was 65.1 per cent; in 103 cases in Ravalli County, it was 48.5 per cent; in 52 cases in Garfield County, it was 17.3 per cent; and in 57 cases in Musselshell County it was but 7 per cent.

DIAGNOSIS

Tick-borne spotted fever is symptomatically most apt to be confused with typhus fever, and in their differential diagnosis a consideration of the attending circumstances is helpful. Typhus fever can be practically ruled out by the fact that tick-borne spotted fever is confined almost exclusively to the spring and summer, corresponding exactly with the tick season and in contrast to the winter prevalence of typhus; that spotted fever is rural rather than urban; that the latter occurs in persons not infested with lice; and that it is in no way associated with poverty, filth and congestion, but, on the contrary, is a disease of the clean, open spaces. Further, close contacts of Rocky Mountain spotted fever do not contract the disease; and Anderson says that "two cases of spotted fever have never been known to occur in the same family in the same season." Finally, most cases of the latter give a history of tick bite about a week before the onset of symptoms.

SYMPTOMS

The symptoms of spotted fever are those of sudden onset, with chills, fever, prostration, headache, and insomnia. There may be soreness of joints; and in some cases at outset a soreness and abdominal pain that may simulate appendicitis. The temperature rises rapidly, with morning remissions, very likely reaching 104 to 105 degrees Fahrenheit; and falls by lysis, usually about the sixteenth to twenty-first day. The pulse is high, and in severe cases may be 130 to 160. The rash usually appears on the third or fourth day, but may occur from the second to seventh day. It appears first on the wrists and ankles, and extends rapidly to back, arms, legs, chest, and finally to abdomen. The palms and soles may be involved. The rash is macular, becoming petechial, confluent and ecchymotic in the second week. In severe cases, necrosis of skin may occur; most common

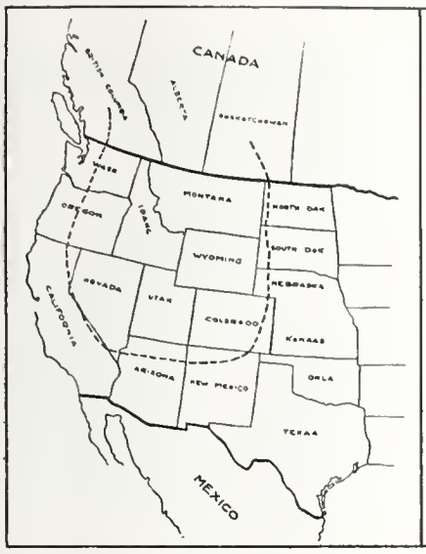

Fig. 4

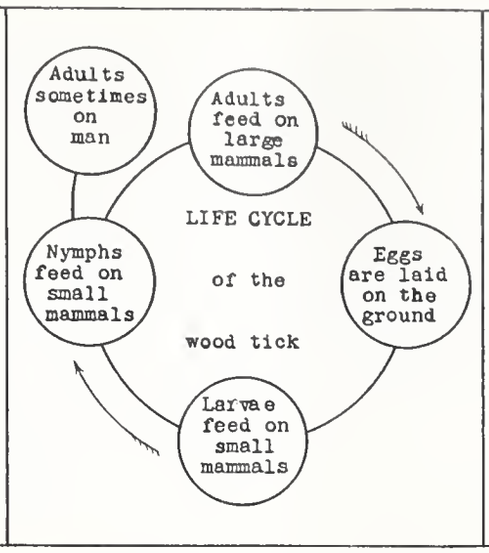

Fig. 5

Fig. 6

Fig. 4.—Map showing by a broken line the approximate known distribution of the wood tick.
Fig. 5.—Diagram showing the life cycle of the wood tick and that while the adult tick sometimes bite man this is not a part of the normal cycle.
Fig. 6.—The wood tick in the "waiting attitude," with the "head" down, and the third pair of legs grasping the support while the other legs are extended.

on the genitalia, fingers, and toes. The nervous and mental symptoms are very severe. There is delirium, and often coma in fatal cases. Deafness, mental hebetude and visual disturbances may be present for some weeks. Convalescence is slow, but usually without after-results. Cases are more fatal in the aged, and children are better risks.

The laboratory shows definite leukocytosis, and the urine may contain albumin and casts. The Felix-Weil test is positive in nearly all cases, agglutinins being usually produced for Bacillus proteus X/19 in a titer of 1:160 or more, and a titer of 1:10,000 may be reached. The identification of the virus is partly positive only, and is made on the effect on laboratory animals. These include an inflammatory condition of the scrotum in guinea-pigs proceeding to ulceration and necrosis, with Rickettsiae found in smears from the tunica; the production in rabbits or monkeys of agglutinins to proteus X/19; the histological picture in the brains of animals; and cross-immunity tests.

Besides the above typical picture, Ricketts says that "Those who have the greatest experience with the disease in man recognize a mild type in which the characteristic eruption is absent." It may be mentioned that these non-eruptive cases, which are usually termed "Colorado fever," are practically never fatal, and the diagnosis tends to be confused.

There is also a condition known as "tick paralysis," seen now and then in Montana and occurring chiefly in children. The bite of the female tick is followed by a progressive motor paralysis, which usually begins with the lower extremities and tends to be fatal if the respiratory muscles are involved. However, if the tick is found and removed early, improvement is rapid. The condition is believed to be due to the injection of a toxin by the tick, rather than the introduction of a pathogenic organism.

VARIATION IN VIRULENCE

While human beings are generally susceptible to the infection of spotted fever, one attack confers immunity. The difference in severity in the clinical pictures relates to the virulence of the virus rather than the resistance of the individual. Parker believes that this virulence is not a constant factor, but is subject to wide variations. He believes that the virus passes the winter in low-grade phases, and that virulence is increased by rise of temperature up to a certain point. He regards the condition as one of reactivation promoted by suitable, yet not too high temperature, but more especially dependent on a blood meal. He considers that the life of virus consists of short periods of high virulence coincident and following the engorgement of each successive stage, and alternating with periods of reduced functional activity in which it is seldom capable of producing more than symptomless infections.

TREATMENT

There is no specific treatment for Rocky Mountain spotted fever. Once the disease is established, treatment is limited to that which is symptomatic and supporting.

Efforts at prevention follow two channels. First, the creation of an active immunity in persons liable to be exposed to the infection. Second, efforts to destroy the virus by attacking its insect vectors and animal hosts.

A vaccine prepared from infected Dermacentor andersonii has apparently some protective value. This relates not only against infection, but in reducing the severity of the disease. In eleven test cases occurring among the previously inoculated, the mortality was 9 per cent; while in the same number of the uninoculated the mortality was 90.9 per cent. Its use is naturally restricted to those exposed to ticks in known infected areas. The United States Public Health Service has agreed to supply 16,000 doses for use in the C. C. C. camps in this corps area during the present spring.

PROPHYLAXIS

Attempts to eliminate the disease by destroying the insect vectors and the animal hosts are faced

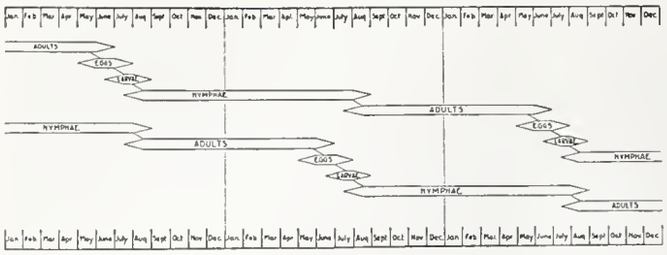

Fig. 7.—Diagram of the seasonal history of the wood tick, showing the approximate duration of each stage. This diagram shows that the adults and nymphae of parallel strains of the tick hibernate and that the life cycle is normally of two years' length. This diagram does not show whether the nymphatae and adults are active and feeding or in hibernation.

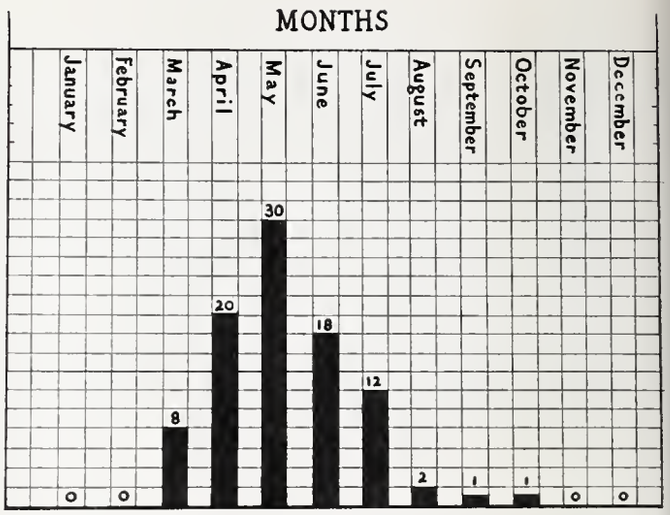

Fig. 8.—Occurrence by months of 92 consecutive cases of Rocky Mountain spotted fever in California.

with difficulties which may readily be considered as practically insuperable. Not only does the tick transmit the infection from one generation to another, but it survives cold and starvation; and its life history is such that it cannot be attacked in restricted breeding places, as is simplified in the case of collections of water and filth in respect to mosquitoes and flies. Further, the warm-blooded hosts, being wild animals, are refractory to control by man; and can be destroyed only as individuals by such relatively incomplete measures as poisoning, shooting, and trapping. Cultivation or burning over will destroy ticks and their eggs, and at the same time drive away the animal hosts; but it is obvious that such measures are practicable only under very limited conditions. Attempts to destroy ticks by the introduction of a small gnat-like insect, Ixodiphagus caucurtei, which is the natural enemy of the tick and kills it by laying its eggs in the body of the latter, are now being made.

Various textbooks suggest the grazing of sheep as a preventive measure, on the ground that it destroys vegetation and renders the area unattractive to rodents; that the lanolin in the fleece destroys ticks, and that in the entanglement of the wool the males find difficulty in reaching the females and fertilizing them. The practical converse of this picture is seen in the occupational status reported for cases in California, of which nearly half occurred in sheep herders, and about two-thirds in

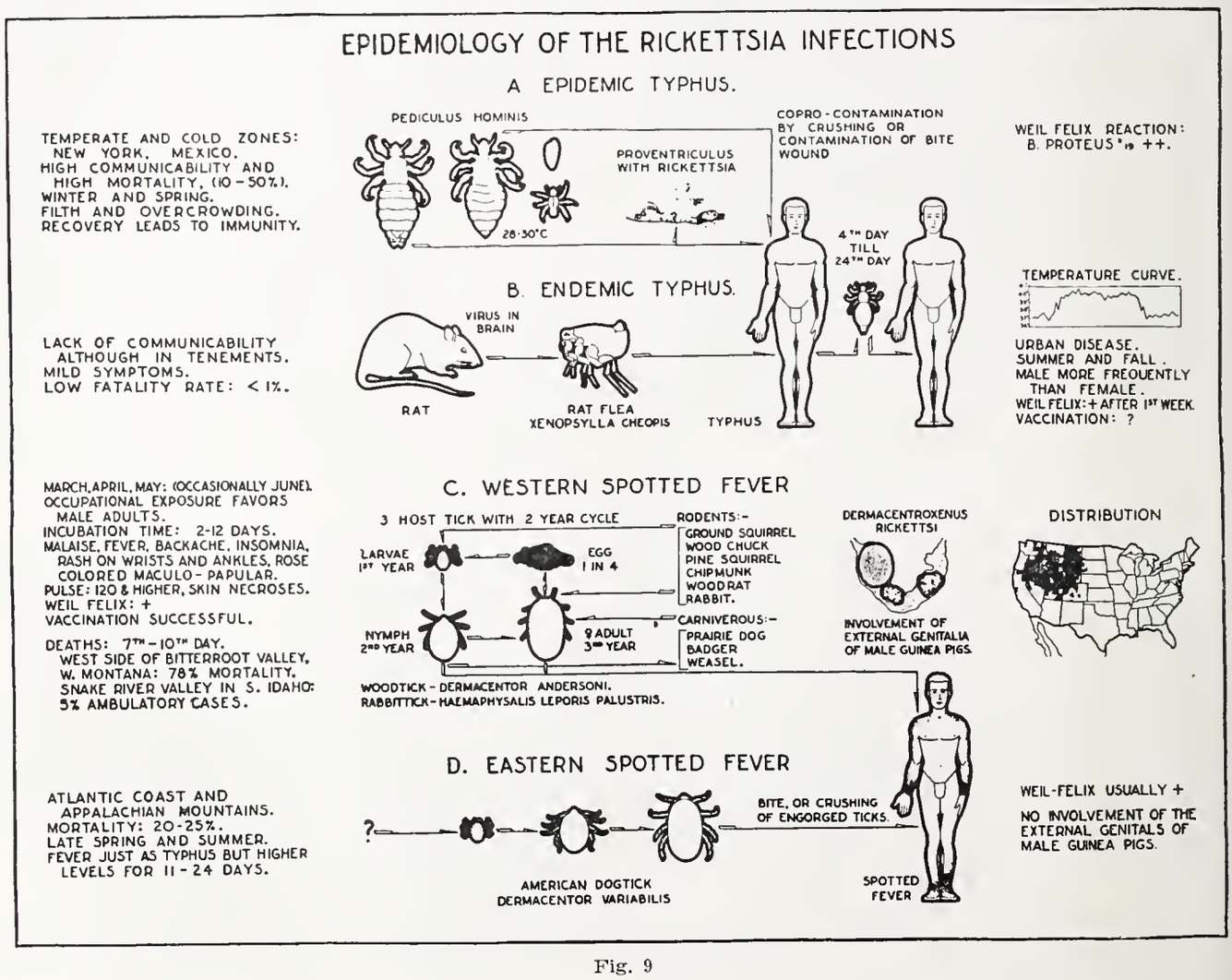

Fig. 9

Fig. 10

Fig. 11

Fig. 10.—Eighth day appearance of rash in a case of Rocky Mountain spotted fever, which was probably modified by vaccination.

Fig. 11.—Fatal case of Rocky Mountain spotted fever: Photograph taken about the eighth day. Many cases in the Bitter Root Valley, Mont., die before the rash has developed to this stage. (Courtesy of Surg. L. D. Fricks.)

sheep herders and ranchmen. Sheep are not only convenient vehicular carriers of ticks, but by reason of their close association with man they convey them to human beings and their surroundings. It is an axiom in the Rocky Mountain spotted fever country that camping in the vicinity of an old sheep corral is especially hazardous.

For the individual, a completely successful measure for insuring personal prophylaxis consists in staying away from infected tick areas during the season in which these insects are active. Thus, for the same area the trout fisher in the spring might be under considerable danger where the deer hunter in the fall would be absolutely safe. Much protection is afforded by clothing, and ticks less firmly attach and are more readily brushed off of tightly woven cotton fabrics, like khaki. Prompt removal of such as gain access to the body is most important, as the tick apparently has to feed a while before being able to transmit the infection. For this purpose the body and clothing should be examined at least twice a day. Gasoline, kerosene, strong disinfectants, or the proximity of the lighted end of a cigarette will make them loose their hold. Or they may be removed by the fingers with a twisting motion. In any case, they should be removed without crushing, for there are apparent cases of infection through the unbroken skin.

* * *

II. ENDEMIC TYPHUS

This disease, originally described by Brill as a mild form of typhus fever occurring in summer in New York, has now been found of much wider distribution and to have its source in infected rodents. The two are indistinguishable serologically, and are differentiated clinically only by the relative severity of symptoms.

EPIDEMIOLOGY OF EPIDEMIC TYPHUS AND ENDEMIC TYPHUS

The epidemiology of epidemic typhus and endemic typhus is quite different. In the first, man is the host of the infection; in the second, the rat. The transmitting agent of epidemic typhus is the louse; while the flea functions in that capacity for endemic typhus. The rôle played by the flea in carrying the infection from rat to rat, and from rat to man, is different from that of the louse as a vector from man to man. Epidemic typhus is a disease of cold weather, attacks groups living under conditions of human misery and filth, and is readily disseminated by lousiness. Endemic typhus is a disease of the hot season, when lice tend to die out and are replaced by fleas. It attacks individuals, and manifests no tendency to spread from one person to another.

Endemic typhus has no relation to lousiness; usually occurs in persons having a close association with rats; and the virus has been recovered from fleas on rats trapped on premises where human cases have occurred. Fleas are readily infectible if allowed to feed on infected rats. Besides fleas, the rat louse is infectible; while it does not attack man, it may transmit the infection from

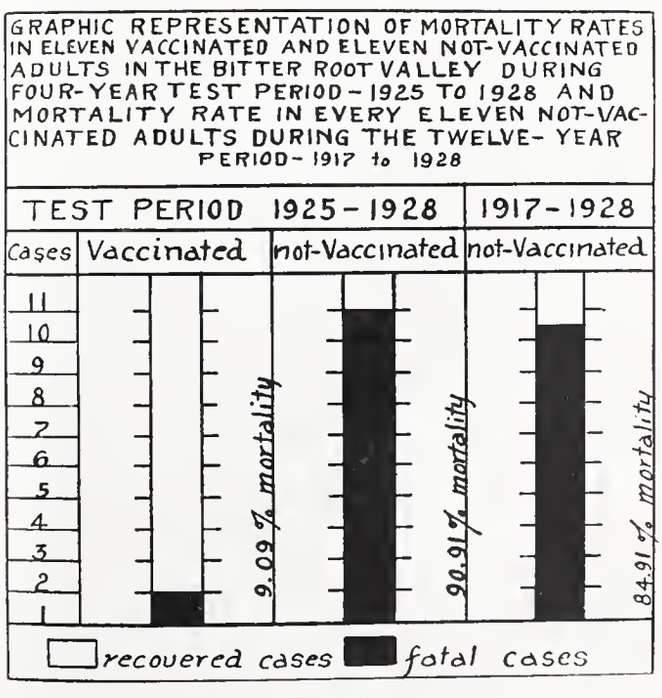

Fig. 12

rat to rat. The fleas that apparently transmit endemic typhus from rat to man are the same species that transmit bubonic plague. The virus has been shown to multiply enormously in at least one species of rat flea; is present in flea excreta, and may transmit the disease if such excreta are scratched into the skin.

Endemic typhus is strictly endemic and localized. It has been reported from various cities of the Atlantic and Gulf seaboard, and as far inland as Montgomery, Alabama. Cases occur in Baltimore from year to year, but not in Washington. Dyer states that he recovered typhus virus from Baltimore fleas on three separate occasions, but that all Washington fleas were negative.

CALIFORNIA STATISTICS

In California both forms of typhus have been reported since 1916. There were twenty-eight cases reported in 1916 and three in 1917. These were apparently louse-borne epidemic typhus; the infection being presumably imported by railroad section hands from Mexico, where epidemic typhus had been raging. Since that time, a total of sixty-five cases diagnosed as typhus have been reported for the State, distributed during thirteen years as follows: 1919, two; 1920, one; 1921, six; 1922, nine; 1923, sixteen; 1924, seventeen; 1926, three; 1928, two; 1929, one; 1930, one; 1931, two; 1932, one; 1933, four. All these latter cases are regarded as being of the endemic form, and no relation from one human case to another being traceable. There were no deaths in this latter series.

SYMPTOMS

The symptoms of endemic typhus closely resemble those of both epidemic typhus and Rocky Mountain spotted fever, but are less severe. The incubation period may vary from six to fourteen days. The onset is sudden, with chills, fever, headache, and prostration. The fever rises steadily, with morning remissions; reaches its maximum in three to six days; and may reach 104 to 105 degrees Fahrenheit. It terminates by lysis about the end of the second week, generally the fourteenth day. The pulse remains slow, even with high temperature. The rash usually appears on the fifth day, but may be delayed to the seventh day. It usually appears first on the chest and upper abdomen. In severer cases it is also present on the upper arm, shoulders and back; and may extend down the forearm, leaving the wrists and hands free. Occasional severe cases may involve the palms and soles. The eruption is one of macules having a diameter of two to three millimeters, and fading on pressure. Frontal headache may be severe. Mental disturbance of some sort is common—as confusion, mild delirium, insomnia, tremors, or photophobia. The white cell counts are usually within normal limits. Blood serum in nearly all cases contains agglutinins for B. proteus X/19 in 1:160 or more; with the highest titer being reached at about the end of the second week, perhaps 1:40,000. The case mortality is only about one per cent, and this practically limited to cases over fifty years of age. Recovery is complete. There is no specific treatment. The preventive measures against endemic typhus follow the same anti-rat procedures that are employed in bubonic plague.

Parnassus and Third Avenues.

DISCUSSION

Harlin L. Wynns, M. D. (Chief, Bureau of Epidemiology, State Building, San Francisco).—Doctor Munson has presented a concise account of Rocky Mountain spotted fever and endemic typhus fever, and should be commended on bringing the two diseases again to our attention at this time. Both occur in California in the spring and summer. The typical case of Rocky Mountain spotted fever, in an individual who has been in a known tick-infected area and who gives a history of tick bite, presents little difficulty in diagnosis. However, physicians should be on guard for the extension of the disease to new areas of the State, as the distribution of the Dermacentor is not confined solely to the known infected areas.

Doctor Munson has called our attention to the possibility that cases resembling the so-called "Colorado tick fever" may occur in California, and I should like to emphasize this point. While it has not been conclusively proved that "Colorado tick fever" is a mild form of Rocky Mountain spotted fever, yet both occur in the same localities of Colorado and adjoining states, and both present the same epidemiologic picture. Some experimental work has been done in this State on a few cases suspected of being "Colorado tick fever," but as yet nothing definite has been determined.

That we have endemic typhus in California cannot be doubted. Most of the cases occur in the southern part of the State, and are mild in character. Five deaths occurred in sixty-five cases reported during the period from 1918 to 1933, inclusive. The seasonal distribution of the cases is not marked, being scattered throughout the year:

January	5
February	5
March	5
April	3
May	1
June	1
July	4
August	8
September	1
October	8
November	17
December	7
Total	65

There has been no tendency for the disease to spread from any one of these cases. No doubt mild cases may escape recognition entirely, unless the possibility of the disease is kept constantly in mind. A limited amount of research work has been carried on in an effort to determine the reservoir and vector in this State, but the results so far have been negative.

❦

W. H. Kellogg, M. D. (State Hygiene Laboratory, Berkeley).—The question of the relationship of Rocky Mountain spotted fever to typhus is interesting because of the many resemblances between them. Organisms of the same type, the rickettsial bodies, are undoubtedly the cause in both diseases, although there are discrepancies between the degree of infectivity of tissues, and the number of rickettsial bodies visible that still remain unexplained. A curious fact regarding the virus of Rocky Mountain spotted fever is that it is more aggressive or invasive when in the tick than in the blood and tissues of mammals. This is shown by the more rapid and more certain effect of guinea-pig inoculation with tick virus than with mammalian. Other curious features are the wide fluctuations in virulence, depending on whether or not it has been "activated," so to speak, by a blood meal. Injection of the contents of an empty but infected tick results in no disease, but does result in immunity; whereas the contents of an engorged tick are highly

infective. Both spotted fever and typhus are characterized by the appearance of vascular lesions, which are exactly the same, and the symptoms are so much alike that clinical observation alone is insufficient to certainly establish a differential diagnosis, although it is true that in Rocky Mountain spotted fever there is a greater tendency to hemorrhage and gangrene. In inoculating guinea-pigs, scrotal lesions are produced by both diseases, although the difference in severity is one means of distinguishing. Finally, the Weil-Felix reaction is obtained in both diseases, indicating a very close relationship of the two viruses. The Weil-Felix reaction being, as it is, the agglutination of the proteus bacillus—an organism having no relationship to the disease—by the blood serum of a typhus or Rocky Mountain fever case is an immunologic mystery. The theory has been advanced that the strain used, proteus X19, is a noninfectious stage of the specific virus. This theory, however, is not generally accepted. The test is, fortunately, a thoroughly reliable one, and is successful in a much higher percentage of cases than is the Widal reaction in typhoid fever. Technicians using the test should be thoroughly familiar with the fact that the agglutinin present in the patient's blood is of the O type, and that the flocular type of reaction is not the important diagnostic sign it would be in diagnosing typhoid. It is possible, therefore, for one not familiar with the difference between the O and the H type of agglutination to make a misleading report. The complete and final separation between Rocky Mountain spotted fever and typhus is made by animal experiments in cross immunization, but clinical distinction is often capable of reasonably accurate conclusion by calling in the facts of the history, such as tick bites, the locality, whether rural or urban, and the season; early summer being the season for ticks, and the open country the place. Both flea-borne endemic typhus and the louse-borne epidemic typhus may occur at any season of the year, but the presence of lice or the proximity of rats are factors easily established.

ANESTHESIA IN SURGERY OF THE CHEST*

By Dorothy A. Wood, M. D.
San Francisco

Discussion *by Harold Brunn, M. D., San Francisco; Leo Eloesser, M. D., San Francisco; Edward H. Bolze, M. D., San Francisco.*

AMONG the newer surgical specialties, surgery of the chest is coming into greater prominence, and consequently the problems of anesthesia for these operative procedures are confronting the anesthetist. Not all of the patients are suffering from pulmonary tuberculosis, but all have diseases of the lung which make it imperative that no ether be given. Many operations are performed under local anesthesia alone. When general anesthesia is used, nitrous oxid-oxygen is the anesthetic of choice in our experience. In many instances a combination of local and general anesthesia is used. The operative field is blocked off with novocain, and the local anesthesia is supplemented by nitrous oxid-oxygen for the more painful procedures, or, when the local anesthesia wears off or the patient becomes too fatigued. The amount of nitrous oxid-oxygen varies from a few whiffs at intervals, an obstetrical analgesia if you will, to a complete surgical anesthesia. The anesthetics have been given for different surgeons, and the methods vary with the type of patient, the disease, the operation to be performed and the surgeon who is operating.

PREOPERATIVE PREPARATION

The preoperative preparation of the patient is of particular importance when an attempt is made to operate with a minimum of inhalation anesthesia. We have used three different methods. In some instances we have given rather large doses of morphin and scopolamin in divided doses, one hour and one-half hour preceding the operation. This has worked very well for some patients, but at other times it has seemed to act as too great a respiratory depressant, and some of the patients have tended to be cyanotic even before the operation was commenced. Still other patients have been given one of the derivatives of barbituric acid hypodermically, about an hour preceding operation. Perhaps our dosage was not large enough, but it has seemed to us that the patients were not sufficiently narcotized. To yet another group of patients we have given avertin, which has proved to be extremely satisfactory. This is particularly good for those who are more nervous, for they can be put to sleep in their own rooms and are unconscious of the entire procedure, even of being taken to the surgery. We use a maximum of ninety milligrams of avertin, per kilogram of bodyweight, and frequently drop down to from sixty to eighty milligrams, and combine the avertin with local or with nitrous oxid-oxygen anesthesia. No untoward results have occurred. Avertin has no effect on lung tissue; it is not eliminated by the lungs, and, given in doses of ninety milligrams or less, does not affect the blood pressure to any great extent. The sleep is very natural; there is no increase in the respiratory rate, and every patient has been enthusiastic about it. This is the most humane method of all, for no matter how stable a person may be, extensive surgery of the lung is an ordeal, and the less a patient knows of his own operation the better. The exhaustion of major surgery under local anesthesia alone is not worth while, when a safe method such as avertin is available.

POSITION OF PATIENT ON THE TABLE

The position of the patient on the operating table presents a very definite problem. When the operative field is placed in the most advantageous situation, the patient's head is often low. He must lie on his side over a pillow or sand bag; this compresses the lower or presumably good lung. The excursion of the affected lung is limited by the operative procedure. It is evident that every factor conducive to a good operative position is the worst possible for adequate aeration of the blood, and consequently the patients are often cyanotic before the operation is even started. To obviate this cyanosis, oxygen is given from the start and throughout the operation.

TYPES OF CHEST OPERATIONS

Operations on the chest may be divided conveniently into two types: first, those in which the pleural cavity is not opened; and second, those in

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* Read before the Anesthesiology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

which it is. In the first group are the phrenicectomies and the thoracoplasties. The phrenicectomies offer no difficulty as to the position of the patient on the table. Novocain is the usual anesthetic agent; occasionally, however, a whiff of nitrous-oxid-oxygen is given when the nerve is evulsed. These are simple procedures and do not present any particular problem in anesthesia. In the thoracoplasties, portions of the ribs are removed so that the chest collapses and compresses the lung. Sometimes sections from all twelve ribs on one side are removed, usually in two stages, in order that cavities in the lung may be collapsed and the infection more readily cleared up. If the condition is localized at either the top or bottom of the lungs, it may be necessary to remove only portions of the upper or lower six ribs respectively. When the thoracoplasty is done on the lower ribs, local anesthesia is generally sufficient. In thoracoplasties of the upper ribs, nitrous oxid-oxygen is usually necessary before the operation is completed, especially when the first rib is removed. It is frequently desirable to remove all, or nearly all of this rib, and it is difficult to anesthetize this area completely with novocain. The patient's position on the table does not effect him profoundly, and it is only occasionally necessary to administer oxygen.

The second group of operations is comprised of those in which the pleural cavity is opened, as rib resection for drainage of pus or removal of cysts or tumors from the pleura, and operative procedures of the lung, such as lobectomy. In this type of operation, when the pleura is opened the lung immediately collapses and the respiratory embarrassment is often pronounced. For these operations it is wise to give oxygen from the outset, maintaining about ten millimeters of positive pressure, so that the upper lung is not entirely collapsed, nor inflated enough to be in the way of the surgical procedure. If the operation is being performed under local anesthesia, oxygen alone is used, so that the maximum amount of oxygenation of the blood may take place through the diminished lung area, and the patient's color be maintained without cyanosis. If, at any time, a respiratory stimulant is needed, carbon dioxid may be added, or, if the procedure becomes painful, nitrous oxid may be added to the oxygen. The pressure is measured accurately and kept at not more than ten millimeters by using a small pressure gauge which is fitted into the system, and which indicates the pressure of the gas from the bag of the gas machine to the patient. When the operation is finished, the pressure is elevated to twenty-five millimeters to aid in the obliteration of the pneumothorax, and the air in the chest cavity is allowed to escape under water through a tube led out from a stab wound in the lower part of the chest. The pressure gauge, however, is only a refinement of technique, for the normal gas pressure from the bag of the new, low pressure machines rarely exceeds ten millimeters, and the maximum pressure available is twenty-five millimeters.

COMMENT

On several occasions bronchoscopy has been done before surgery, and a tracheal catheter inserted so that tenacious sputum may be removed by suction and the oxygen may be given directly into the lung. In the usual case, however, this is unnecessary, for a mask applied to the patient's face is just as efficient in maintaining pressure in the lung. Moreover, if the bronchoscopy and operation are performed under local anesthesia, the double procedure becomes very long and tiring to the patient, and the cocainization of the throat and larynx inhibits the cough reflex so that sputum may be re-aspirated, or may spill into the good or dependent lung, instead of being expectorated. For the same reason some clinicians are fearful of giving nitrous oxid to these patients, feeling that there may be more respiratory effort under general anesthesia and, with the cough reflex abolished, there may be a spill into the good lung. Avertin anesthesia is, therefore, to be desired, for there is no increase in respiratory rate or effort; if anything, the opposite is true, and the cough reflex is not abolished. The coughing may be a disadvantage to the surgeon, but after the accumulation in the throat is removed, a few whiffs of nitrous oxid can be given and the operation resumed.

Spinal anesthesia for lobectomies has been recommended. This is a rather dangerous procedure and, if used at all, must be handled with care and used only in selected cases. With a spinal anesthesia which extends to the upper part of the thorax, the respiratory excursions are markedly diminished; this is advantageous to the surgeon, but does not permit adequate aeration and oxygenation of the lungs and blood. It is, therefore, imperative that oxygen be given throughout.

During a lobectomy, one of several emergencies may arise. The heart may stop, perhaps as a result of a mediastinal shift which is brought about by the disturbed relations created by the open chest and the collapsed lung. If the wound is closed temporarily with a towel, the lung expanded with oxygen, and the patient turned onto his back, so that he may use the dependent lung, recovery is rapid. If air embolism occurs, it is usually fatal. A third complication is shock, which may be the result of the loss of blood, or may occur without hemorrhage. The operation is such a major procedure that, even though the patient may be in good condition at the close of the operation, all patients receive a transfusion of whole blood.

SUMMARY

1. The preoperative preparation of the patient is important. We have used three types of drugs in such preparation: morphin, in rather large, divided doses, barbiturates hypodermically, and avertin by rectum. The latter has given excellent results, and has won the approval of the patients receiving it.

2. The position of the patient on the table presents a definite problem for the adequate oxygenation of the blood.

3. The usual procedure is to block the operative field with novocain and supplement the local anesthesia with nitrous oxid-oxygen as needed—from a few whiffs to complete surgical anesthesia. In some instances, a tracheal catheter has been used to deliver the gas or oxygen, but this technique is not essential.

4. In open operations on the chest, oxygen ordinarily is given continuously with slight positive pressure. The pneumothorax may be obliterated partially by increasing the pressure at the close of the operation.

5. The use of spinal anesthesia presents definite dangers. If such anesthesia is used, oxygen *must* be given continuously throughout the operation.

6. Some form of anesthesia, during which the patient may be unconscious, either avertin or nitrous oxid-oxygen, is best for the major procedures. Extensive surgery of the lung is an ordeal, and the less one knows of his own operation the better. The exhaustion and shock of a long procedure under local anesthesia is not worth while when other safe methods are available.

1390 Seventh Avenue.

DISCUSSION

Harold Brunn, M. D. (384 Post Street, San Francisco).—The problem of anesthesia in surgery of the chest is still unsolved. In a recent trip through the East I found that every clinic had its own method. It is interesting, for example, to know that Shenstone and James of Toronto do all their lobectomies with spinal anesthesia preferably. I have used spinal anesthesia on a few cases, but I have always been hesitant in employing this method of anesthesia, fearing the added shock and drop in blood pressure, both from the operation and the anesthesia. However, as in operations on the abdomen, the operation itself is made much easier, and were it not for the fear of drop in blood pressure, it is ideal.

As elsewhere, much depends upon the condition of the patient, and the anesthesia must be fitted to the patient and the type of operation that is to be done. Precautions must be taken all along the line, and for the best surgery one must have great confidence in the anesthetist, so as to be warned when danger signals arise. It is my own belief that deaths which have occurred, not infrequently, on the table during chest operations, and which have been frequently ascribed to the anesthetic, are really the result of air emboli. Air embolus can occur with very slight ruptures of the lung. With a lung full of pus, as in bronchiectasis or lung abscess, it is very possible that the secretion will by gravity enter the other lung, and if sufficient, may block it off, so that we must always by postural drainage, or even by bronchoscopy, empty the bronchus so far as possible before the anesthesia is started. Many times it is wise to cocainize the pharynx and leave a catheter in the trachea, so as to remove any fluid as it collects during the operation. Intratracheal anesthesia, when tumors are removed or on occasions when both sides of the pleura may be damaged, is invaluable. I believe that we cannot use any one type of anesthesia to the exclusion of others. Probably the preparation of the patient beforehand is of more value than the actual form of anesthesia, and this was exemplified on my eastern trip by the fact that no two clinics carry out the same anesthetic procedures. It would seem, therefore, that in every clinic that anesthetic is used with which the anesthetist in charge is most conversant, and so handles with the greatest of confidence.

Leo Eloesser, M. D. (490 Post Street, San Francisco).—Doctor Wood's opinions carry great weight. Of the factors contributing to success in difficult operations in the chest cavity, choice of a proper anesthetic and, above all, of a skillful anesthetist, are often the most important.

Any prolonged inhalation anesthesia is dangerous for tuberculous patients, not so much on account of harm done to the pulmonary tissues by the anesthetic agent (for there is no reason to believe that N_2O and oxygen are harmful), but because the respiratory effort that the patient makes while being anesthetized is harmful. One guards a tuberculous patient carefully against exercise, yet the deep breathing of anesthesia is tantamount to that of a strenuous hill climb. Still I agree with Doctor Wood that a short, light gas anesthesia, supplementing really efficient novocainization, is preferable to local anesthesia alone for thoracoplasty or other extensive procedures. The shock, both mental and physical, is less. Avertin seems objectionable for patients with considerable expectoration, and with whom it is not desirable to abolish or to lower this cough reflex. They sleep too deeply and too long with avertin. It seems better to have patients half-awake than too deeply asleep.

Real difficulties of anesthesia arise when the chest is widely open, as in lobectomy, and when respiration is further encumbered by the patient's lying on the better side. In such operations coughing must be stopped; the sudden inflation and deflation of the lung that occur when the patient's cough puts a great strain on the heart and makes operations in the open chest extremely difficult. A considerable part, if not all of such operations, may be done under efficient local anesthesia, after proper preparation with morphin and large doses of the barbiturates. During certain phases of operation, such as work in the hilum, gas may be used. These intervals of gas anesthesia need ordinarily be but short—five or ten minutes or less—after which the gas may be discontinued. Injection of a few drops of a solution of cocain with adrenalin, either with a hypodermic syringe through the wall of a large bronchus and into its lumen, or with a spray if the bronchus is open, will often stop a troublesome cough reflex.

The operator should plan his operation carefully, so as to waste as little time as possible, once the chest is open. There is no need for haste until the pleura is entered, but once the chest is wide open every minute counts.

Edward H. Bolze, M. D. (450 Sutter Street, San Francisco).—At the Mount Zion Hospital the anesthesia of choice in chest surgery has been a combination of local and nitrous oxid-oxygen, the operative field being blocked off concurrently with the administration of the gas. Obviously, the ideal anesthesia for this type of surgical procedure must necessarily be one which is under second-to-second control, particularly as regards optimum oxygenization, management of the cough reflex, and ease of respiratory movements. Local anesthesia alone has been used extensively, since it possesses the advantage of eliminating pulmonary irritation and assuring voluntary control of coughing and expectoration. The ill effects, particularly upon a nervous patient, of a long procedure under local anesthesia, have been stressed by Doctor Wood. In combining local and nitrous oxid-oxygen less of both agents is required, minimizing the objectionable features of both.

The combination of avertin and nitrous oxid-oxygen provides a good anesthesia. We have found that this is especially true in children, with whom it is a distinct advantage to carry them to the operating room asleep. If the pre-anesthetic narcotic is avoided, better control of the cough reflex is had. Where avertin has been used as a basal anesthetic agent, one can give nitrous oxid-oxygen with an excess of oxygen, minimizing the possibility of anoxemia.

LOS ANGELES COUNTY MEDICAL ASSOCIATION—ITS NEW HOME*

By STANLEY K. COCHEMS
Los Angeles

THE story of the library and the permanent quarters buildings of the Los Angeles County Medical Association is the story of a well conceived plan working through a number of years toward a definite goal, which was reached on October 25, 1934, when the structures were thrown open for the use of a membership in excess of two thousand.

That these buildings have been in the minds of the membership through the years was evidenced by the fact that more than thirty-five hundred, members and friends, thronged the rooms and library on the evening of the housewarming.

THE BEGINNING OF THE PERMANENT QUARTERS FUND

Fourteen years ago the idea of the value of a permanent quarters to the Association became a tangible thing when the Board of Trustees in 1920 authorized the building up of a permanent quarters fund. Members were asked to make voluntary pledges of $100 or more. Two years later, in 1922, these voluntary pledges, representing 650 members, or nearly 50 per cent of the then membership, totaled $70,450. Because such a large percentage of the membership had pledged voluntarily, the Board of Trustees then voted to make the permanent quarters pledge mandatory for all new members, in fairness to those who had voluntarily pledged and paid.

Fig. 1.—Photograph of the new home and headquarters of the Los Angeles County Medical Association, located at the northeast corner of Wilshire Boulevard and Westlake Avenue, Los Angeles. The entrance to the library is to the left, and the entrance to the administration and assembly rooms of the Association is to the right. The long windows show the location of the lounge-auditorium room.

* CALIFORNIA AND WESTERN MEDICINE is indebted to Mr. Cochems, executive secretary of the Los Angeles County Medical Association, for this article.

See also editorial comments on page 410.

Fig. 2.—Showing the northwest corner of the lounge-auditorium.

Fig. 3.—North wall of lounge-auditorium, showing the stage. The St. Mihiel mural is to the left, and the King's College mural is to the right. At the opposite end of the room are murals of Rothenburg (Germany) and the Rathaus (Wien).

Excellent financial management by the Board of Trustees, Dr. Harlan Shoemaker, secretary-treasurer for the period 1919 to 1930, and Dr. Harry H. Wilson, secretary-treasurer for the period 1931 to 1934, built this permanent quarters fund to where it could conservatively be valued at $300,000 in cash and income property and other real estate.

THE MAINTENANCE PROVISIONS

Possibly the most important feature in this story is the fact that these officers provided in their financing a fixed income to maintain these buildings. This was provided by the purchase of a valuable piece of property on the southeast corner of Wilshire Boulevard and Westlake Avenue. This property was leased for ninety-nine years, with a definite income of approximately $12,000 a year. Later various real estate transactions saw the Los Angeles County Medical Association the owner of the valuable piece of property on the northeast corner of Wilshire and Westlake, upon which its completed buildings now stand.

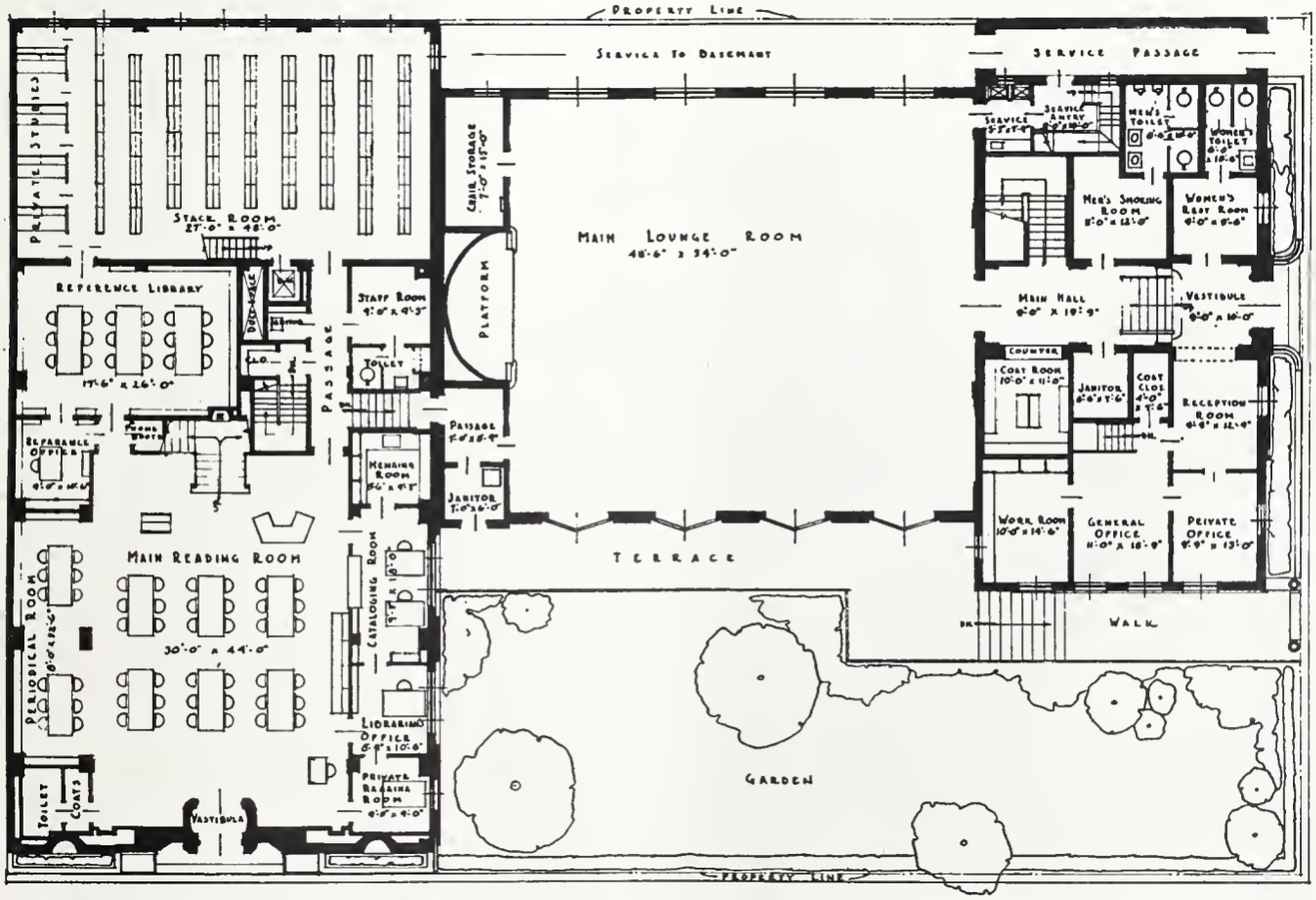
INFLUENCE OF THE BARLOW MEDICAL LIBRARY COÖPERATION

The decision to build in 1934 is due largely to the magnificent offer of the Barlow Medical Library Association to give to the Los Angeles County Medical Association their very valuable collection of books and other medical literature, which in the past had been housed at 742 North Broadway. It was also felt by the Board of Trustees to be excellent business policy to build before the price of building materials increased, so advantage was taken of the market and contracts were signed.

Fig. 4.—Showing one end of dining room, which has a seating capacity of 140 places.

OTHER COÖPERATIVE EFFORT

Splendid coöperation was very much in evidence during the building period—that is, coöperation of the Building Committee, the Board of Trustees, the officers, Gordon B. Kaufmann, architect, and the William Simpson Construction Company; and the spirit of coöperation evidenced by the membership-at-large in liquidating their



Floor plan drawings, courtesy of Architect Gordon B. Kaufmann.

Fig. 5.—First floor plan of the Library and Assembly Hall, Los Angeles County Medical Association.

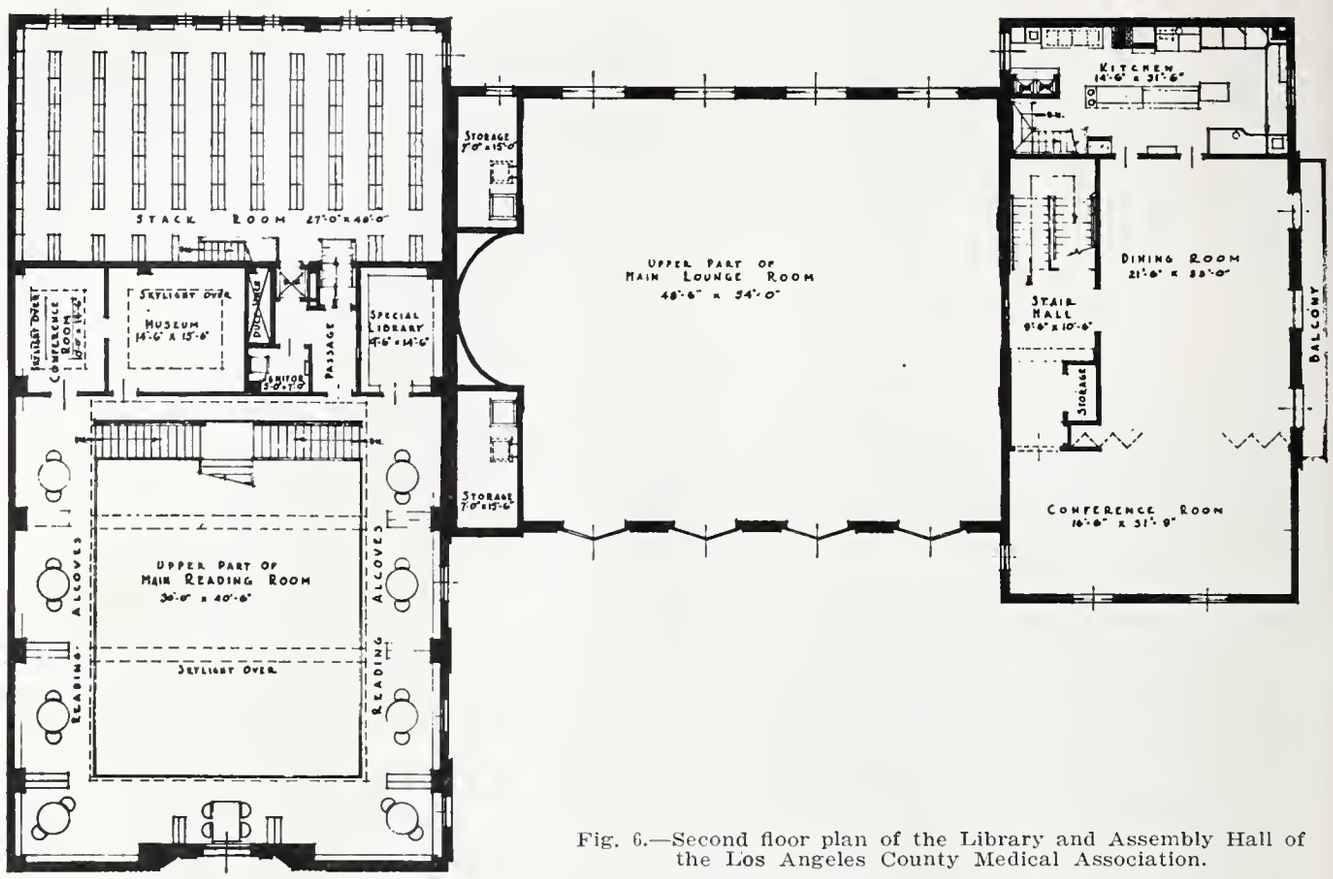


Fig. 6.—Second floor plan of the Library and Assembly Hall of the Los Angeles County Medical Association.

permanent quarters pledges. This spirit shown by the membership, giving evidence of a truer appreciation of the need of a cohesive organization, now represents one of the greatest assets that the Association has. It is the fulfillment of a hope, of a wish long cherished by all those interested in the welfare of organized medicine in Southern California.

DEDICATION OF THE BUILDINGS

The Association's new home became a tangible thing on October 25, 1934. Its buildings, which offer essential club privileges to the entire membership, mean far more to the membership than a bit of pride of ownership. They stand as a symbol of a unity of purpose, an expression of true fraternalism, and the spirit of true coöperation so vitally essential today for the protection of the highest of all professions.

What this building program of the Los Angeles County Medical Association will mean in the years to come to medicine in Los Angeles County and to the public health and welfare cannot be estimated. During the few short weeks that the membership has enjoyed a place to meet and to dine and a modern library with all modern conveniences, offering an incentive to study and research, a very marked spirit of fraternal understanding is apparent.

THE LIBRARY BUILDING

The buildings consist of a two-story, Class A library building, 50 by 100 feet, and a two-story assembly building, 60 by 100 feet. The main reading room of the library provides ample reading space for many years to come for a membership greatly enlarged, and with greater incentive to use the library. The library building contains a reference library, private study rooms, and on the mezzanine floor a number of sections devoted to special literature. It has a room set apart for rare volumes. The stack room allows for four floors of stacks, setting the total volume capacity of the library at approximately ninety thousand. Mrs. Mary E. Irish, for years librarian for the Barlow Medical Library, is librarian.

THE ASSEMBLY OR HEADQUARTERS BUILDING

The assembly building consists of a lounge-auditorium, with two-story height ceiling. In the west wall there are four ceiling-height windows looking out on an exquisite bit of landscaping of Brazilian pepper trees, poplars, and shrubbery. During the day this large room, measuring some 50 by 55 feet, is essentially a club lounge where the members may relax during the noon hours. It is readily converted into a formal auditorium for general meetings of the Association or for the meetings of the larger groups that are a part of the Association. Provision is also made to convert it into a banquet room, where three hundred may dine. Its capacity as an auditorium is well over five hundred.

The first floor of the assembly building also includes the offices of the Association. The second floor over the offices consists of a dining room and a kitchen. The dining room can be divided into a large room and a smaller room, to accommodate two dinner groups at one time. A total of 140 can be accommodated in the complete dining room. Kitchen facilities are adequate to take care of more than five hundred, the kitchen being completely modern in every aspect.

The total cost of these buildings, completely furnished, amounts to approximately $105,000.

THE PURPOSE OF THE BUILDINGS

In the architect's original conception of these buildings and in his conferences with the Board of Trustees and the Building Committee, there was the thought to make these buildings representative of the membership in their design, in their decoration, and in their furnishings, rather than to follow some classical form; and it was in this that the coöperation mentioned before has resulted in the County Medical Association now having a library and a permanent quarters that leaves little room for criticism from any of the large membership of well over two thousand. The buildings are unique, they are modern, they are entirely different, yet no discordant note is struck. They answer the physical needs of the Association and they express that intangible something—the spirit of the Association.

1925 Wilshire Boulevard.

THE BARLOW MEDICAL LIBRARY, AND ITS SUCCESSOR, THE LIBRARY OF THE LOS ANGELES COUNTY MEDICAL ASSOCIATION

By MARY E. IRISH
Los Angeles

THE seed from which the Barlow Medical Library grew was sown in 1897. At that time the population of Los Angeles was about 86,000, and there were 303 physicians registered in Los Angeles County.

THE FIRST MEDICAL LIBRARY IN LOS ANGELES

A medical school founded in 1886, as the "College of Medicine of the University of Southern California," had its buildings on the west side of Buena Vista Street, between Ord and Alpine streets, "only a few blocks," to quote from an early bulletin, "from the heart of the city." One of the college buildings was the Hendryx Laboratory, and in it a room had been set aside for a library.

The original sponsor of this medical school library was the late Dr. Stanley P. Black, professor of pathology in the institution, after whom the Stanley P. Black Memorial Lecture, now annually given in Pasadena, is named.

Dr. Wilbur A. Hendryx, who donated the money for the erection of the Hendryx Building, made the first gift toward the new library, a collection of about fifty volumes; and Dr. Milbank Johnson, in 1900, presented approximately 1,000 volumes of journals. The collection was known at the time as the "Hendryx Medical Reference Library," and Doctor Johnson was appointed librarian. All the early accessions were gifts from physicians who were either members of the faculty of the old College of Medicine, or friends of faculty members.

The history of the Library, from 1897 to 1906, is that of many libraries: a constant addition of books and journals, with a consequent need for more and more space in which to properly house them.

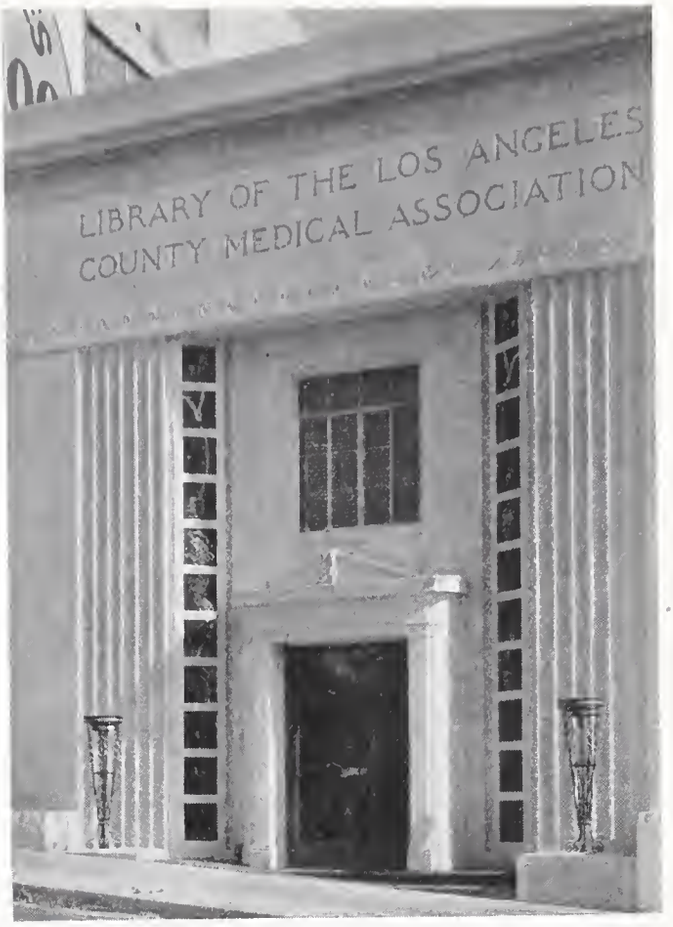


Fig. 1.—Entrance to the Library Building of the Los Angeles County Medical Association at 634 South Westlake. The cornerstone at the lower right hand pillar has inscribed upon it: "THIS STONE WAS SET BY WALTER JARVIS BARLOW, M. D., JUNE 21, MCMXXXIV."

THE BARLOW MEDICAL LIBRARY

This need was met, in 1906, by the erection of a library building by Dr. Walter Jarvis Barlow—a member of the faculty of the College of Medicine of the University of Southern California, and later its Dean—at 742 Buena Vista Street

Fig. 2.—North side of library, showing entrances to reference libraries and stack room. The Galen in the alcove is a Carrara marble, sculptured by Tullio Lombardi (1600), and presented to the Barlow library by Dr. W. Jarvis Barlow.

Fig. 3.—South side of the library, showing the west entrance from 634 Westlake Avenue.

(now North Broadway) and opposite the College. In that year, inspired by the prospect of a new building, forty-eight physicians pledged themselves, as patrons, to pay $25 annually for the support of "the Medical Library built by Doctor Barlow." An association, named in the doctor's honor, was thus formed, and a constitution and by-laws adopted under which, with some amendments, the library has been conducted until this year, 1934, when it was taken over to become the central nucleus of the "Library of the Los Angeles County Medical Association."

The Barlow Medical Library plan provided for memberships of three kinds: patron, annual, and associate. Later on, life and honorary memberships were added. Membership entitled the holder to the privilege of borrowing books and journals. To the patrons went the responsibility of electing officers and trustees, who controlled the Library's policy. From the beginning, the library building was always open to physicians and students for reading and study, whether they were members of the Association or not.

An invitation to the opening of the new building, in 1907, was issued in the name of the Barlow Medical Library Association, to which were appended the names of the trustees, Dr. Milbank Johnson, president; Dr. Stanley R. Black, secretary; and Doctors George L. Cole, Fitch C. E. Mattison, B. F. Church, John R. Haynes, and W. A. Edwards, followed by a roll of forty-seven members, of whom three were women. On this list the following have continued membership until the present: Doctors W. Jarvis Barlow, George L. Cole, W. W. Beckett, F. M. Pottenger, Hill Hastings, Granville MacGowan, Joseph M. King, and Charles C. Browning, while twenty-one of the charter workers have passed on.

The opening and dedication of the Library took place on February 7, when Dr. William A. Edwards made the speech, still recalled, felicitating the profession and the city on the generous gift of Doctor Barlow.

On page one of the first guest registration book is the entry, "Library formally opened, February 7, 1907." The first signature is that of J. R. Renaker, of Lexington, Kentucky. Through the years, the names of many of the officers and members of the Los Angeles County Medical Association are to be found on the pages of this book. The name of Dr. George Dock is probably the one most often found, as he had the excellent habit of registering at each visit. On these pages are also to be found the names of many eminent men who have visited the library, the most distinguished among them, perhaps, being Dr. William H. Welch of Johns Hopkins, and a close friend of Doctor Black who never lost his active interest in the institution.

The Barlow Medical Library building is of fire and earthquake-proof construction, and classic in architectural form. The building itself was given to a non-profit holding corporation, which also held the title to the buildings of the medical school. In 1909, the faculty decided to transfer its property to the State University, and at that time the library building was deeded to the University of California.

In 1907, Dr. and Mrs. Barlow were in Washington and obtained from the Library of the Surgeon-General a large number of files of valuable medical journals. The report of the librarian, in 1908, showed 1,912 bound volumes of books and periodicals, and 2,000 volumes of unbound journals. Very large gifts of books have come from the Los Angeles Public Library, the Pasadena Medical Library, and the Alhambra Public Library, and also from a great many private individuals, including the families of physicians at whose death their libraries, instead of being broken up and scattered, were so donated.

As already stated, in 1909, the Barlow Medical Library building was deeded to the regents of the State University; but until October, 1934, the Library was housed in the building, and during all these years a portion of the librarian's salary was paid by the Los Angeles Medical Department of the University of California.

The Barlow Medical Library, therefore, may be looked upon as the embryo or nucleus of a large, fully-equipped and well-sustained library

Fig. 4.—The Barlow Medical Library Building at 742 North Broadway, Los Angeles.

of our present day. Convention in nomenclature gives the term "large library" only to institutions having more than 10,000 volumes; and it is interesting that the Barlow Medical Library has grown to belong to the "large library" group. The last report showed 18,119 volumes, exclusive of unbound periodicals and duplicates; and unbound volumes would bring the number well on to 30,000 volumes.

During the period of the existence of the Barlow Medical Library it was served by six presidents: Dr. Milbank Johnson, the late Dr. Stanley Black, the late Dr. Walter Lindley, Dr. William Duffield, the late Dr. T. C. Lyster, and Dr. George Dock. There have also been six librarians: Dr. Milbank Johnson, Miss Mary Williams, Miss Jessie Wier, Mrs. Katherine Ingham, Mrs. Ida D. Fellows and Mrs. Mary E. Irish. The Library's growth and excellent condition is very largely due, therefore, to the untiring interest and energy of these faithful officers who have balked at nothing, if it seemed necessary for the welfare of their trust.

SOURCES OF SUPPORT OF THE BARLOW LIBRARY

The library has received support from many sources. First, by dues of members, many of whom belonged to the Los Angeles County Medical Association, the Los Angeles Department of the University of California, and the Los Angeles and California Medical Associations. Sections of the Los Angeles County Medical Association also aided in the upbuilding of departmental collections, through subscriptions and purchases of books and magazines, and the payment for binding or by direct money contributions. In addition to such aid there have been, as mentioned, many gifts of money, books and periodicals from interested individuals.

Fig. 5.—The original library room in the Hendryx Laboratory Building.

TRANSFER OF BARLOW LIBRARY TO LOS ANGELES COUNTY MEDICAL ASSOCIATION

On November 7, 1932, the Board of Trustees of the Barlow Medical Library Association presented resolutions to the Board of Trustees of the Los Angeles County Medical Association submitting a plan for transferring the Barlow Library to the County Medical Association. The membership of the Board of Trustees at that time included the following physicians: Dr. George Dock, president; Dr. A. Elmer Belt, vice-president; Dr. H. E. Schiffbauer, secretary-treasurer; Dr. W. Jarvis Barlow, Dr. George H. Kress, Dr. Merrill Hollingsworth, Dr. T. C. Lyster, Dr. William Duffield, Dr. Carl Rand, Dr. C. C. Browning, Dr. Joseph M. King, Dr. W. W. Beckett, Dr. R. G. Taylor, Dr. Harlan Shoemaker, Dr. Donald Frick, and Dr. Carl Howson.

Fig. 6.—Dr. W. Jarvis Barlow, whose donation of the Barlow Medical Library Building laid the foundation for the collection that is now the library of the Los Angeles County Medical Association.

The resolutions adopted by the Board are as follows:

"Resolved, That the Barlow Medical Library Association, acting by and through its Board of Trustees, hereby tenders as a gift to the said Los Angeles County Medical Association all the books, periodicals, literature, stacks, bookcases, files, and all the personal property of the said Barlow Medical Library Association, provided that the said Los Angeles County Medical Association shall agree to keep and perform the hereinafter stated terms and conditions. Upon written acceptance by said Los Angeles County Medical Association of such gift, upon said terms and conditions, and upon provision by said Los Angeles County Medical Association of fit and adequate quarters for said Library, and upon its being in a position to take over the maintenance of said Library, the officers of this Association are authorized and directed to deliver to the Los Angeles County Medical Association all the above described personal property; . . . and be it further

"Resolved, That this offer of gift of said Library upon the terms and conditions aforesaid may be withdrawn by this Association by resolution of its Board of Trustees, unless the Los Angeles County Medical Association shall on or before January 1, 1935, accept this offer in writing, and shall, on or before said date, be in a position to take and maintain said Library in fit and adequate quarters."

THE LIBRARY BUILDING OF THE LOS ANGELES COUNTY MEDICAL ASSOCIATION

Following this act by the Barlow Library Trustees, steps were immediately taken by the Los Angeles County Medical Association to accept the proffered gift; and with just pride it has accomplished this two and one-half months prior to the limit of the stated period, so that the books are now all housed in the beautiful library building at 634 South Westlake Avenue. The reading rooms are most attractive, and every provision for quiet

study has been well planned. The bibliography stack and table give ample space for research of the literature. New books are on display in the main reading room; rare books in their own particular niche; special sciences are grouped most conveniently for use on the mezzanine floor, while other late and standard volumes are placed in the reference room. About 250 current periodicals are displayed in an alcove off the main reading room, thereby providing six months' files within easy reach.

VALUE OF MEDICAL PERIODICALS

The medical periodicals form the essential part of the Library, for they contain the fundamental contributions to medical literature. Included also are the most useful textbooks, systems of medicine, encyclopedias, and works on medical biography and bibliography. Through these means, the Library seeks to meet the needs of all classes of medical readers, from all who wish to keep up with the rapid advance of medical knowledge in general, to those who desire to make an exhaustive study of some special subject.

Members of the Special Libraries Association of Southern California, as well as physicians, whether residents of Los Angeles County or visiting, it is hardly necessary to state, are welcome to bring and seek to solve here all their medical problems.

THE FUNCTION OF A MEDICAL LIBRARY

A medical library is of service to its patrons in several ways. It helps keep the busy physician in touch with new discoveries in the healing science; it assists him in diagnosis and treatment; it aids in finding precedents in medico-legal cases; and it helps both in preparing medical papers and in making for such, correct bibliographies. No doctor can subscribe to all the medical journals; but a good medical library, if he will but use it, gives him the opportunity to read a great many periodicals and so to keep up with new discoveries wherever and whenever they are made.

Since the great value of a medical library lies in its journal files, the librarian is constantly trying to complete old files and to subscribe for the best of the new journals. It is always a difficult task to complete old files; but through membership in the Medical Library Association, with its exchange lists, this is gradually being accomplished, and many out-of-print journals are received that are unobtainable through other channels.

A medical library is especially necessary at the present day. Science and scientific research have made rapid strides since the inception of the library in 1907, and the records of these discoveries are all to be found in the Association's collections, as the first news of such scientific revelations and accomplishments comes through the pages of medical journals. It is the policy of this, the Library of the Los Angeles County Medical Association, as it was of the Barlow Medical Library Association, to index all journals as soon as they arrive, in order that physicians may know immediately about discoveries and their significance.

Special attention is also given to collecting works on medical topics concerning California and the Southwest, and to all material bearing on medical progress, or referring to or by medical men and women in this western area. Contributions to these topics, as well as to other lines of study appropriate to the Library, are suggested to those in a position to further the advancement of medical history and education.

At the time the gift of the Barlow Medical Library was made to the Los Angeles County Medical Association, the officers of the Barlow Medical Library Association were: Dr. George Dock, president; Dr. A. Elmer Belt, vice-president; Dr. H. E. Schiffbauer, secretary-treasurer. The Council of the Los Angeles County Medical Association has selected these same officers as the Administrative Committee of the Library under its new ownership.

From 303 physicians in Los Angeles County in 1897, to 3,918 physicians and surgeons in the County in 1934, according to the medical directory, among a population in the City of Los Angeles of 1,282,929, the need of still larger medical library facilities is very evident. Now, however, with this increase already made and the developed Barlow Library the property of the Los Angeles County Medical Association, supported by its entire membership and its various Sections, by unaffiliated physicians of Southern California, by the medical societies and groups, hospitals, universities and medical schools, the Library of the Los Angeles County Medical Association will rapidly take its place in the foremost ranks of American medical libraries, and will so splendidly fulfill the purpose for which it was once dedicated, and for which it has been rededicated November 27, 1934; to afford a place for broad and intelligent research to physicians of Los Angeles County and of the Great Southwest.

634 South Westlake Avenue.

POSTURE IN EARLY CHILDHOOD*

By C. L. Lowman, M. D.
Los Angeles

Discussion *by A. J. Scott, M. D., Los Angeles; Clifford Sweet, M. D., Oakland; Rodney F. Atsatt, M. D., Santa Barbara.*

POSTURE in childhood, implying a consideration of the skeletal alignment, or so-called body mechanics, along with bone diseases and deformities, should be of common interest to the pediatrist as well as to the orthopedist. Who, more than the child's physician, should be alert to potential conditions which may produce disabilities later in life?

If I can stimulate in you the same resolve to prevent future disabilities of the muscles, joints, and nervous system, that you have already shown in cases of asthenic and pretubercular children, I shall feel amply repaid for my efforts.

*Read before the Pediatric Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

STRUCTURAL ALIGNMENT AND HEREDITY

There are authorities on this subject, or shall I say, writers, who say that faults in structural alignment are hereditary, and that variables from a certain median are normal within a considerable range. They insist that no amount of exercise or treatment can prevent or modify the ultimate posture which the individual will develop. This, I am sure, is contrary to the experience of those of you who, by training or interest, have observed the corrective efforts of some orthopedist and his technical assistants.

Direct contact in school work, also, will have shown you benefits accruing from the work of physical educational departments, especially in centers where corrective work is given to children with postural faults.

Critics say that our opinions are derived from the consideration of abnormal or pathological clinical material; but our experience at the Orthopedic Hospital, in Los Angeles, where more than the usual amount of attention is paid to postural deviations, proves that we deal with the same set of faults in the same groups of children that are found in the schools. In fact, most of these postural patients are referred to us by school physicians, health nurses, and physical directors from districts where no school corrective departments exist.

IMPORTANCE OF REMEDIAL ATTENTION DURING CHILDHOOD

We all know that it is a common experience of daily practice with adults to find functional disturbances, and even pathological conditions, which, we must admit, would not have developed had the factors underlying them received remedial attention during childhood. When we relieve an adult of low-back pain, sciatic neuritis or so-called sacro-iliac strain, often very chronic in nature, simply by raising the heel of the shoe on the side of the short leg, or tilting the heels to correct faulty leg rotation, it is logical to presume that these conditions would not have developed had the underlying conditions been recognized in childhood and corrected.

For example, if a girl child is allowed to complete her childhood and come into maturity without proper physical measurements being made to establish the fact that she has a tilted pelvis secondary to maldevelopment, from habitual sitting on one foot, as well as having a short leg, unilateral flat-foot or coxa vara on one side, is it surprising that we are confronted with birth injuries from distorted pelves, painful low backs at the menses, spinal curvatures with neuritis in shoulder girdles, head-tilts with maldevelopment of the face and jaws, and unlevel eyes?

It is distressing to the orthopedist to receive a continuous stream of young patients with deformities and disabilities, a large portion of which could have been prevented. Many of these cases have been in the hands of reputable pediatrists, and we find it embarrassing to have to make excuses and attempt plausible explanation to the patient's question, "Why didn't Dr. So-and-So recognize this condition? He has cared for our child since she was a baby."

REPORT OF CASE

Let me cite a recent specific case.

F., a child ten years.

Complaint: Pain in her foot, near the heel. Was previously seen by another orthopedic surgeon, who diagnosed apophysitis after examination of the feet (he did not make a complete postural examination) and ordered her to keep off her feet for several months. This was done: the child used crutches for some time, but pain came back on return to weight bearing.

Observation showed us a stout child, obese for her age, with a stout mother and two sisters, both with endocrine dysfunctions. Examination showed the following postural faults: a short leg of one-half inch, knock knees, pronated ankles and second-degree flat-foot, scoliosis, secondary to the pelvic tilt, uneven shoulders, and faulty head position in both planes.

The foot symptoms were explained by the overweight put on a skeleton which had always been inadequate to the load placed upon it. The child's physiological age had never been on a par with her chronological age; hence the ligamentous and muscular strain in the feet.

The mother stated that she wanted only the child's feet examined, but was informed that we always make all-over examinations of all children. We adhere to this rule regardless of fee, even when perfectly obvious explanations of the symptoms are offered.

After explaining that the foot condition was only a part of the whole postural picture, we made the complete examination. When we discovered the conditions related above, the mother expressed herself as delighted with the thoroughness of our examination, and readily acquiesced in the further expense of a pelvic and spinal x-ray.

Following a custom established for twenty years or more in our office and clinic, an x-ray in the standing position was made. True to our prediction to the mother, we demonstrated the fairly well-advanced spinal curvature, the pelvic tilt, showing the crest of one ilium about a half-inch above the other, with distortion of the birth canal and increased anteroposterior tilt of the sacrum beginning, and resulting in the hollow back deviation.

This child, with corrective shoeing, foot-strapping, and exercises, obtained complete relief of foot symptoms within six weeks, and in the same time made marked correction of general alignment. Whether or not we will succeed in correcting the distortion of the pelvis, time alone will tell.

COMMENT

But what could I say to the mother's question why had not the doctor who had always cared for her child discovered these faults earlier? I had to admit that if the endocrine obesity had been recognized from obvious type and family characteristics, and had been properly treated, the knock-knees and foot condition would probably have been prevented, or at least greatly minimized. I could only make lame excuses to explain why the leg lengths had not been measured and a plumb line used to establish pelvic and spinal malalignment, so that these deviations could have been checked in their incipiency.

I have chosen to cite this one case, but assure you that it is not a lone, isolated case, but only an example chosen from the daily grist of office and clinic practice. For that reason I am moved to urge you to center your attention on details which entail such far-reaching results in the future lives of the children who pass through your hands.

Some orthopedists have been criticized for giving medical treatment to youngsters brought to them for remedy of static and postural faults. As

body engineers, I feel that we are justified in doing this, provided that we go no further than prescribing for actual conditions directly involved. In cases that are already under the care of a physician, we telephone or write to the doctor in question, giving him the opportunity to coöperate and carry on with the medical prescribing.

BODY POSTURE SHOULD BE CONSIDERED IN ROUTINE PHYSICAL EXAMINATION

I suggest that your routine physical examinations include not only the usual heart and lung, nose and throat and nutritional considerations, but a careful inspection of the child's completely nude body, in the sitting, standing and lying positions. Put your thumbs on the two posterior spines of the ilium, and then on the two anterior spines, and unless they are both absolutely level, use a tape measure as follows, with the patient standstanding (the patient just referred to showed the following measurements):

Posterior superior spine to the ground, right and left. Right, 32. Left, 31¾.

Top of mid-point of iliac crest to the ground. Right, 34¼. Left, 33¾.

Anterior superior spine to the internal malleolus; then to ground, right and left. Right, 29¼; left, 28¾. Right 31⅜; left, 31.

If measurements differ, then figure out whether you have

1. A simple lateral tilt;
2. Simple torsion of the pelvis; or
3. A combination of tilt and twist.

Sitting, thumbs on posterior superior spines will show tilt. Same over crest, or actual measurement, crest to table. Then in front, thumbs on anterior superior spines will confirm the tilt or unmask a twist.

The measurement in one position may seem equal and O. K., but in one or both of the other positions they may not be.

Another case, a girl, age eleven, shows these discrepancies. Her measurements are as follows:

Anterior superior spine to internal malleolus. Right, 31.75. Left, 32 plus.

Anterior superior spine to ground. Right, 34 minus. Left, 34.75.

Crest to ground. Right, 39. Left, 38.

Posterior superior spine to ground. Right, 35.75. Left, 35.25.

You will note here that the left anterior superior spine distance from the ground is three-fourths of an inch plus, higher than the corresponding posterior superior spine, which is one-half inch lower than its opposite. This discrepancy could not be noted from measurement of anterior spine to internal malleolus, lying, which is what is usually taken. The fact that there is about the same difference in the measurements, both including and excluding the feet, shows that unilateral arch depression is not the causative factor.

IN CONCLUSION

In conclusion, these measurements, taken with the plumb-line readings—anterior, posterior, and lateral—will show up the structural faults sufficiently so that you can suggest treatment or refer the case for further orthopedic consultation.

If every pediatrist would check the statics of his child patients at least once a year, making the parents realize that such examination is good preventive medicine and excellent insurance against the development of future trouble, I am sure that both physicians and patients would be benefited.

523 West Sixth Street.

DISCUSSION

A. J. Scott, M. D. (1401 South Hope Street, Los Angeles).—Doctor Lowman has brought out a very important subject in pediatrics which I think is too often overlooked, or more likely neglected. One of the first admonitions we give the students in our annual lectures is to "strip the child." This gets to be a sort of joke with classes, but we tell them that is the first and most important thing in pediatrics after the history.

If the child is stripped and allowed to stand with a good light striking the body, and a careful inspection made of the general structure of the child, there is no need to overlook the important things that Doctor Lowman has emphasized. Perhaps we may not know what to do after we discover the defects, but the important thing to know is what is normal. We can refer to the proper consultant if we do not know what to do when we find slight deviations.

So often we see the typical fatigue posture Doctor Lowman mentions which makes the mother tell the child "to stand up straight," etc., and the corrective gymnasium teacher advises corrective exercises. On careful inquiry, we usually find that not corrective exercises are needed, but *rest* and plenty of it. We have in these children rapidly growing structures, which are soft and easily influenced by weights or postures. These structures do better when they are allowed plenty of rest to develop thoroughly, and then they develop strongly. Exercise can come later, when the tissues are firmer.

Too many children have too many activities thrust upon them by ambitious mothers. Inquire carefully into the question of dancing classes, music lessons and practicing, hours of retiring and midday rest; the type of mattress and whether or not pillows are used; whether reading is done after going to bed. All these things have a bearing upon this question of fatigue, and this in turn upon the posture. As was stated by the essayist, the heavy child with relatively delicate understructures, which are only growing tissues, is easily subject to strain and pressure, then deformity.

Hence, strip the child and insist upon sufficient rest.

*

Clifford Sweet, M. D. (242 Moss Avenue, Oakland).—I wish more physicians had Doctor Lowman's enthusiasm, energy and skill, especially in their contacts with children, who, being in the formative period of life, can be carried far toward an ideal state of health.

In our attempts to improve the physical make-up of children we must, it is true, often contend with one or all of the following difficulties: (1) Undesirable hereditary qualities or congenital defects. (2) The results of a faulty nutritional regimen at some period of life. (3) The damages, resulting from disease, through improper postural treatment during acute illness, and from lack of protection for weakened muscles during a prolonged convalescence. (4) The general human laziness, indifference, and lack of education which permit bad habits of body balance and mechanics to become chronic and progressive. We, as physicians, can defeat or greatly modify all of these if we do not permit an attitude of "Oh, what's the use?" to have a dwelling place in our minds until the formidable giants—Indifference, Doubt and, finally, Despair, have added their great strength to that of the enemy.

Every child should have frequent physical examinations, and no physical examination is complete without careful attention being given to the mechanical state of every part of the body, as is so clearly empha-

sized in the paper. When physicians generally carry out such examinations, many persons will be spared years of physical discomfort and debilitating nervous strain. I am certain there will then be less and less prescribing of such devices as arch supports and corrective shoes by shoe clerks, quite as often with detrimental as with beneficial results.

The more difficult corrective problems must be referred to the orthopedic expert, but every pediatrician can give intelligent attention to the child's bed, to the manner in which he stands, sits and walks, and to the clothing (especially the socks and shoes) which he wears. A firm flat bed maintains balanced body muscles during sleep. Correct habits of standing, walking, and sitting can be taught by the same methods which produce a serviceable working knowledge of arithmetic. The child who sits on a chair or school seat that is too high or too deep has his shoulder girdle pulled forward by the unsupported weight of his legs. Shoes and socks that are badly fitted force the child into habits of standing and walking that unbalance the entire system of skeletal muscles.

The well thought-out, practical measurements outlined in the paper will detect deviations from the best obtainable state of body mechanics. Further study will reveal whether heredity or congenital defects must be treated, or whether environment alone must be changed. The purpose of environmental control is to make the best possible use of the human material, which it is our great privilege to care for and mould toward perfection.

Rodney F. Atsatt, M. D. (1421 State Street, Santa Barbara).—The importance of having the pediatrician think of the posture mechanics of his small patient cannot too strongly be emphasized. All orthopedic men are continually faced with and chagrined by children with bad structural postures from scoliosis, and by what is even more lamentable, bad functional postures. I say chagrined, because many scolioses are caused by easily remediable short legs or asymmetrical pelves, and most functionally poor postures are the results of faulty habits and neglected muscle tone.

Children are the most plastic material we have to work with. A sympathetic and understanding doctor, and an efficient and wide-awake physical therapist can so enlist the interest of the child that even early in life corrective exercises may be given and enjoyed, to the extent that complete coöperation is possible in the abolishment of a prominent abdomen and marked lordosis—the signs of bad habits and poor muscle tone.

Similarly a few simple measurements, coupled with a truly comprehensive inspection of the back which actually sees and recognizes a scoliosis, will often make possible an immediate correction of the scoliosis by means of a simple heel lift to equalize the distortion in legs or pelvis.

BIRTHMARKS*

OBSERVATIONS ON TREATMENT

By Charles R. Caskey, M. D.
Los Angeles

Discussion *by L. R. Taussig, M. D., San Francisco; H. O. Barnes, M. D., Los Angeles; Moses Scholtz, M. D., Los Angeles.*

IN this short article only the commoner types of nevi can be discussed. These will include some vascular and nonvascular types. The simpler type of vascular nevi is the port wine mark, or nevus flammeus. This is the smooth, non-elevated mark of red or purplish color. It may or may not fade upon pressure. Those that do not fade on pressure are the more difficult to treat. In many instances the nevus flammeus is the least satisfactory to treat, as far as cosmetic results are concerned; for so often it is this type of mark that occurs on the face.

PORT WINE NEVI

There are various ways of treating port wine nevi, the object of all being a sclerosis of the blood vessels. Carbon dioxide snow for small lesions is sometimes quite satisfactory, but in large nevi not fading on pressure repeated blistering doses are required, which may in the end produce a white atrophic appearance. Some improvement can be effected with electrolysis and the dessication current, but the results are a mottling of the skin. I have tried sodium morrhuate intradermally and subdermally without, however, producing satisfactory results. The water-cooled ultraviolet light, in my hands, has not brought about as good results as has been claimed by some. I have not used the air-cooled ultraviolet for this purpose, as advocated by Andrews and others. Over large areas it is best to use a ball or cylinder-shaped piece of snow, employing a rolling motion over the same area repeatedly, without much pressure for several seconds, until the desired reaction is produced. This will not produce a sharply outlined reaction; but with proper management it will effect a fading reaction into the borders. This is desirable in treating large port wine marks. I have had little experience in treating this kind of birthmark with radium. I do not feel that the margin between good cosmetic results and later sequelae is great enough to justify the use of this remedy for the average nevus flammeus.

NEVUS VASCULOSUS

The strawberry mark, or nevus vasculosus, is red to purple in color and elevated above the surface of the skin. They are most often irregular in shape and have a berry or lobulated appearance. This type of birthmark is not so difficult to eradicate, in many instances, if favorably located and it is not complicated with cavernous extensions. Carbon dioxide snow or electrodessication can be used where cosmetic results are not so important. Repeated, gentle treatments are better than severe ones, which leave the skin thin and atrophic. Very good results with beta rays of radium in suberythema doses will sometimes give good effects. Radium treatments should be cautiously repeated. Better results may be obtained by waiting, especially if improvement is evident. A mother will usually coöperate in this respect, if you will tell her at the first visit that it will take time to treat the case. The combination of carbon dioxide snow and radium in these cases should, if used at all, be employed with double caution.

CAVERNOUS ANGIOMATA

In the cavernous angiomata, the deep vessels, especially the veins, are involved. The overlying skin may be almost normal, but it is not infrequently the site of a strawberry mark. These marks may occur on any part of the body, but

* Read before the Dermatology and Syphilology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

those most difficult to treat are found on the face. Carbon dioxide snow may flatten the overlying strawberry mark; but if used too strenuously, it may so damage the surface of the skin that the proper treatment of the deeper lesion is hindered. The gamma rays of radium are the best agent with which to attack the deeper lesion with least likelihood of injury to the surface of the skin. The great temptation is to give treatments too often, for, as a rule, these nevi will continue to grow somewhat before the sclerosing effect of radium takes place. Quicker results must not be sacrificed for final cosmetic effect, for future sequellae may cause more grief than the nevus itself. If treatments must be frequent, they should be in such fractional dosage that marked atrophy of the skin is avoided. It is not much credit to radium or the operator to flatten a cavernous angioma, and later have atrophy and telangiectasia staring you in the face. More recently it has been suggested that some of the sclerosing solutions used in treating varicose veins might be used to sclerose the blood sinuses in this type of birthmark. So far only one of my cases with cavernous nevus has been so located that I could use this method. This nevus is on the back. I am using quinine hydrochloride and urethane. This case is too recent to report at this time. I have not had the temerity to use sclerosing injections about the face of a child, after having seen several cases of very painful and long-continued dermatitis and ulceration from injections of varicose veins. I am unwilling to try this form of treatment except in very favorably located cavernous nevi. The slower and safer treatment with radium is preferable until a more successful solution and technique are perfected.

SPIDER NEVUS

Nevus araneus, or spider nevus, is a superficial vascular nevus, the center of which often shows a vascular punctum from which the smaller vessels radiate. These small nevi can be destroyed by trichloracetic acid, carbon dioxide snow, electrolysis, electrodessication, or the tip of a very fine cautery. The acid, though not painful, is likely to leave a small scar. Carbon dioxide snow trimmed down to a pencil point is useful in some cases, but the action is likely to cover more tissue than intended and produce scarring or depigmentation. Electrolysis is a good method, but it is not so well borne in children in whom we see most of the nevi of this kind. I think the best method in most instances is the electrodessication needle. A sewing needle should be used, and a very fine spark turned on momentarily after the center is entered. For the radiating vessels superficial surface sparking is usually sufficient.

LYMPHANGIOMA CIRCUMSCRIPTUM

Lymphangioma circumscriptum is a form of nevus characterized by deep-seated vesicles due to a dilated and cystic condition of the lympatic vessels. They are usually yellow or straw colored. Sometimes the surface is verrucous. Cures have been reported in these cases by radiation, but I have not found them radiosensitive. Sometime ago I observed the case of a boy with this type of nevus on the scrotum, pubis and thigh. X-ray had been used a few years before. X-ray telangiectasia and atrophy were present, and also the nevus. Radiation had been used without any protection to the testicle, which was atrophic. Clearly, the wrong modality had been used. The lesions were greatly improved with electrodessication. Carbon dioxide snow, electrolysis, or excision, are methods which may be used in some cases depending upon their size and location.

MOLES

The more frequently encountered nonvascular nevi are the moles. These may be flat and hairy or nonhairy, or they may be raised and either hairy or nonhairy. Flat, nonhairy, pigmented lesions can be greatly improved by treatment with carbon dioxide snow or the electrodessication needle. Superficial treatments over a period of time give better cosmetic results with either method. In some cases better cosmetic results can be obtained by surgical excision. It is not necessary to remove any more tissue this way than with the cutting current, and the advantage is that the wound can be sutured and so have only a narrow linear scar, instead of a broad, ugly one, I think that the fear that these nevi will become malignant is overemphasized. Hairy moles seldom become malignant. The black or dark brown ones seldom do, unless they are stimulated by irritation or improper treatment. Sometime ago I saw a large mole on the face which was showing definite signs of malignancy due to radium treatment. Radiation has no place in the treatment of pigmented nevi.

Hairy moles, either flat or raised, should first have the hairs removed by electrolysis before other methods are used, unless the hairs are very fine and numerous. Snow or electrodessication, in dosage sufficient to improve the nevus, will not destroy large hairs, but will render the skin sclerotic so that electrolysis is almost impossible if attempted later.

TIME REQUIRED AND RESULTS TO BE EXPECTED FROM TREATMENT

The most favorable time to treat nevi, particularly the vascular type, is soon after birth. Young cells are more easily affected than older cells. Recent marks are more responsive to carbon dioxide snow and to radium. Many marks have a tendency to grow as time goes on. The larger and older the lesion becomes, the poorer will be the cosmetic result. Treatment is more easily applied the first months of life, and there is also then less sensitiveness to pain.

Of the vascular nevi, the strawberry mark is more responsive to treatment. A few weeks to a few months is sometimes all the time needed for their treatment. The cavernous type of nevi require a longer period of treatment and observation. To get the most desirable results with radium, the treatment had best be carried out over a long period of time. Some of these lesions require two

to five years to get satisfactory results. At first the child should be observed every few weeks, while later observations can be from one or more months apart. The treatment with radium should be kept below erythema doses, and treatment deferred if there is continued improvement on observation. This sometimes requires judgment and persuasive tactics to keep the parents and friends satisfied and hopeful.

Port wine marks are not so likely to grow after birth and there is less urgency to begin their treatment early. The same is true of pigmented hairy and nonhairy birthmarks. However, in many instances, if these marks are treated early in life, there are more regenerative processes brought to play to repair destructive methods necessary for their cure.

As to what should be expected as fair cosmetic results will depend upon the type, size, and location of the birthmark under treatment. This should be discussed at the first visit and repeated from time to time, for parents are likely to expect too much as a final cosmetic result. They should be informed that abnormal skin is not replaced with normal skin, and all that can be hoped for is a pale smooth scar in vascular nevi, and a depigmented area for the pigmented types of nevi. Plastic surgery may be a great aid in getting good cosmetic results. This should be kept in mind, and radiation or other treatment used accordingly.

EQUIPMENT NECESSARY AND BEST SUITED FOR TREATMENT OF NEVI

Carbon dioxide snow, commercially supplied in tanks, is to be preferred to "dry ice." I have tried the latter several times when my tank became empty, but found the reaction too harsh.

A high frequency machine, with a finely adjustable spark gap, should be selected. The current best suited and less painful for skin work is one which will turn the skin white rather than black when the needle is applied. Many physicians get poor results in treating skin lesions with their machines and never know the reason. I rarely ever use other than the Oudin current. Where destruction is indicated, I think that the actual cautery will, in most instances, give better results than the cutting current or the bipolar current. Cautery effect can be varied a great deal by varying the heat of the electrode. In treating hairy nevi one should have an electrolysis outfit. I have tried various types, but prefer a battery set. It is less painful and produces less scarring when a low milliamperage is used. For the successful treatment of vascular and cavernous marks, radium is necessary. A fairly large flat plaque is indispensable. There are instances where needles or seeds can be used to advantage. One should be thoroughly familiar with the uses and dosage of whatever type of radium applicator he uses. Much caution is necessary in the application of radium.

SUMMARY

1. Treatment should be begun in certain types of birthmarks as soon as they are observed. Strawberry marks and cavernous nevi may enlarge rapidly, thereby becoming more difficult to treat as time elapses.

2. Parents should be advised as to which treatment is indicated, and the approximate length of time necessary for treatment and observation. They should also be advised as to what should constitute reasonably good results for the type of mark under treatment.

3. Proper instruments, skill in their use, patience, and judgment are necessary for good results in the treatment of birthmarks.

1930 Wilshire Boulevard.

DISCUSSION

L. R. Taussig, M. D. (384 Post Street, San Francisco).—Doctor Caskey has very properly indicated that no one form of treatment should be considered as adapted to all types of nevi. I have had no experience with the use of sclerosing solutions in the treatment of vascular lesions, as reported by Andrews. This type of treatment may offer certain advantages, although it will be necessary to learn its limitations. In the larger cavernous hemangiomas, I have found that burying gold seeds of radon, combined with moderate surface radiation, hastens the cure and minimizes the amount of radiodermatitis very markedly. In the treatment of small non-vascular nevi, I employ the electrocautery or electrodesiccation, but prefer to accomplish the result with one treatment rather than to make use of repeated treatments. As Doctor Caskey states, surgical excision produces the best result in some of these lesions. There is no question but that electrolysis should be employed to remove the hair of a hairy nevus, before using any form of cautery. This treatment alone may eradicate the entire nevus. It is wise to warn the patients or relatives that removal of a birthmark necessarily will leave some scar.

H. O. Bames, M. D. (1134 Roosevelt Building, Los Angeles).—Unless we can promise a definite improvement with reasonable assurance, it would be better to leave nevi alone.

Destruction en masse always results in replacement by scar tissue which, because of its permanent whiteness, may be as definite a cosmetic disfigurement as the former highly colored one. It may even be worse, because of scar tissue retraction or keloidal overgrowth.

For this reason carbon dioxid snow or trichloracetic acid, also diathermy, x-ray and radium, while useful in exceptional cases are distinctly not remedies of choice. The best remedy is one which will destroy the abnormal constituent, yet preserve the normal tissue.

In the pigmented nevi of small dimensions this is accomplished by fulguration with the Oudin current; scars are prevented by searing only to a depth no greater than the depth of the mole itself.

In the capillary nevi it calls for electrolysis with the galvanic current, or fulguration, destroying carefully each individual blood vessel and thus preventing scarring of the surrounding tissue.

The presence of blood vessels which are large enough to permit being entered with a needle and sclerosing fluid brings the whole nevus within the classification of where abnormal tissue exceeds normal in amount. In all such cases, and this also includes the larger moles, clean surgical excision of the entire mass is the remedy of choice.

The resection must be planned with a view to linear closure blending with normal skin lines. If the defect is too large to permit closure by direct approximation, it is to be covered with a full thickness graft; and in choosing the source of this graft, we must be mind-

ful not to create another cosmetic defect there. While the present vogue of sun worship limits greatly the available area of supply, it has also helped to alleviate our fear that the transplant might not ultimately blend in color, for apparently all parts tan.

To conclude, superficial nevi in punctate, stellate or diffuse form are best treated by dermatological methods, chiefly electrolysis or fulguration. Nevi which encompass the whole skin, vascular or pigmentary, and all those which contain larger blood vessels, are best treated by plastic surgery.

Moses Scholtz, M. D. (1930 Wilshire Boulevard, Los Angeles).—Birthmarks are a subject of considerable clinical interest, as they are a source of great anxiety to the parents. The speaker is to be commended for a conservative and practical presentation of the subject.

I heartily endorse two points emphasized in the paper. The first, that nevi can and should be treated as early as discovered. Many parents are afraid to treat birthmarks early in life, and prefer to wait unti the infant gets older. As a matter of fact, infancy is the best age to treat nevi, since the cells and tissues of a younger individual are much more radiosensitive, and tissue repair in a younger patient, from a cosmetic point of view, is much more promising.

The second point is that the certainty of obtaining good cosmetic results grows in direct proportion to the length of duration of treatment. In other words, mild, cautious and well-spaced treatments are much more preferable than heroic, intensive and closely set applications.

The potentiality of cure and the facility of the technique varies greatly with different types of nevi. Of four common types—nevus flammeus, port wine, spider, pigmented and cavernous strawberry type—the first, port-wine type, which often covers extensive areas, offers the least satisfactory cosmetic results. Irrespective of the method applied—quartz light, pressure applications, snow or electrodesiccation—it is well-nigh impossible to obtain a uniform discoloration. Mottling effect is fairly certain to result.

The small spider-type nevus is easily improved and obliterated by cautious application, to the center of the lesion, of trichloracetic acid, carbonic dioxid snow or electrodesiccation needle.

Pigmented nexi yield readily both to chemical snow and electrodesiccation, but one cannot be certain that the resultant scar will be cosmetically preferable to the removed mole. I personally do not encourage young females to remove pigmented moles on the face unless there are definite indications for it.

The most gratifying and promising cosmetically therapeutic field is presented by the strawberry type of nevus, which commonly is also the most disfiguring. In these cases results are often spectacular. Only two methods of treatment are applicable in strawberry-type nevus—chemical snow and radium. Snow, however, is applicable only in supercial and flat lesions. In cavernous elevated nevi, snow is contraindicated, as a deep scarring is sure to result; besides, the necessity of blistering to obtain the deeper effect adds another objection to surgical dressings and possibility of infection.

It is in these cases that radium reigns supreme and gives perfect cosmetic results. In lesions not exceeding its size, a ten-milligram radium plaque is sufficient. It is important to start with obliteration of the deeper layers of cavernous nevi by employing gamma rays, with appropriate filtration of one to three or more milligrams brass filters. No standardized technique as to the number of hours or thickness of filters can be given, as each and every case requires individual figuring. Variations of radiosensitivity of individual skins comes in strongly as a factor in therapeutic technique.

After the deeper layers of cavernous nevi are obliterated and the lesion has flattened down, the more superficial blood vessels are treated with beta radium rays, with correspondingly lighter filtration and shorter exposures. The remaining superficial telangiectasis, particularly at the margins of the nevus, can be obliterated by electrodesiccation or touching up with trichloracetic acid. Snow should not be used on skin subjected to prolonged and repeated radium applications.

The duration of treatment in these cases ranges from six months to two years. The treatments should be spaced farther apart as the case advances. Starting from weekly or biweekly treatments, the intervals should be increased gradually to one, four, and six weeks. More haste less speed, is a therapeutic motto to be remembered in these cases.

KETOSIS—RELATION OF THE PITUITARY TO SEX DIFFERENCES THEREIN*

By Harry J. Deuel, Jr., Ph.D.
Los Angeles

Discussion *by C. H. Thienes, M.D., Los Angeles; Howard F. West, M.D., Los Angeles; Emil Krahulik, M.D., Los Angeles.*

It was first shown by Deuel and Gulick [1] that women excrete larger amounts of acetone bodies in the urine during fasting than do men. Thus the ratios of the average excretion of acetone bodies, as determined from eleven experiments on five different women and twenty-two experiments on five different men, were approximately ten on the first fast day, six on the second, four on the third, and two and five-tenths on the fourth. In addition, much greater acidosis obtained in the women examined than in the men. The CO_2 combining power in one experiment on a female subject fell from a normal level to twenty-five volumes per cent of CO_2 on the fourth fast day, while in the male subject the reduction was only to approximately forty-five volumes per cent following a similar period of fasting. It is uncertain from these data whether the acetone body excretion would ultimately reach an identical level in the men and women following a prolonged fast. The closer agreement between the levels in the two sexes on the fourth day is to be attributed largely to the fact that several of the women in whom the ketonuria was the most severe had been forced to abandon the experiment by that time, while all of the male subjects had continued through this period. Therefore, the comparison of excretions on the fourth day is between the average of the experiments on those women in which the ketosis had been least severe and the mean of all the experiments on men.

SEX DIFFERENCE IN KETOSIS IN ANIMALS

In order to determine whether this sex difference in ketosis could be demonstrated in other species, Butts and Deuel [2] administered sodium aceto-acetate to fasting male and female rats and guinea-pigs, and noted the urinary acetone body excretion. Although these animals do not normally develop an appreciable ketonuria during fasting, a

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Read before the Obstetrics and Gynecology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

considerable quantity of acetone bodies was eliminated after the administration of sodium aceto-acetate in a dose of 1.5 milligrams per square centimeter of body surface. The excretion in the female animals during a period of fasting as long as seven days was about double that of the males. In a later series of tests, Grunewald, Cutler, and Deuel [3] showed that following ovariectomy similar doses of sodium aceto-acetate could be largely oxidized, and that much smaller amounts were excreted in the urine than occurred with normal female animals or even with normal males. Castration with the male resulted in an unmistakable but small drop in the level of excretion over that of the normal males. These experiments can be interpreted to mean that some substance is produced in the ovary which is primarily responsible for the increased ketonuria, either by causing a more rapid breakdown of carbohydrate or by stimulation of the fat metabolism. When theelin was administered to castrated male and female rats in massive doses, there was no appreciable effect on ketonuria. Theelin is probably not the substance which is responsible for the greater ketosis in females.

SEX VARIABILITY IN CARBOHYDRATE METABOLISM

The sex variability in carbohydrate metabolism was also demonstrated by the difference in level of liver glycogen in male and female rats fasted for various periods up to ninety-six hours after the administration of comparable doses of glucose (Deuel, Gulick, Grunewald, and Cutler [4]). Although no sex differences were noted in the level of liver glycogen in unfasted animals, which had been on a high carbohydrate diet, it was found that the liver glycogen was significantly higher in male than in female rats when they were killed without fasting after having partaken of a high-fat diet. In rats killed after a fast of 24, 48, and 72 hours after glucose, the value of liver glycogen was consistently higher in the male than in the female. In addition, the content of liver fat was invariably higher in the female animals than in the males. The level of liver glycogen after ovariectomy was appreciably higher than it was in normal females or even than in normal male rats.

ANTERIOR PITUITARY HORMONE

The presence in the anterior pituitary body of a hormone which produces ketosis suggested to us the possibility that sex differences in ketonuria might possibly be associated with variations in the production of this hormone. If this hormone were to act on a substance produced in the ovary, metabolic changes which would ultimately result in ketosis might be brought about. Such a hormone would be largely inactive in the male and in the ovariectomized female, but it would exert its characteristic effect in the normal female. However, when a neutralized alkaline extract of the anterior lobe of the pituitary was injected into fasting rats receiving diacetic acid, or receiving only NaCl solution, a markedly increased level in ketonuria resulted. The response was as great in males as in females, and in castrated animals as in normals. These results indicate that the presence of the ovary is unessential for the development of ketosis. The normal mechanism probably involves a stimulation in production of the ketogenetic hormone by some ovarian hormone other than theelin or theelol. There is some experimental evidence to indicate that the hormone, progestin, which is formed in the *corpora lutea* is responsible for this action. The ketogenetic hormone is apparently a protein, inasmuch as we have found that it is destroyed by boiling, that it is precipitated from solution by alcohol, and that it is inactive when administered by mouth. It is not identical with the thyreotrophic hormone, since the latter has been shown by Krichesky [5] to be thermostable. It is also different from antuitrin S, the pituitary-like hormone present in the urine. Moreover, only a slight ketonuria occurred after the administration of the thyreotrophic, adrenalotrophic, and growth hormones kindly furnished us by Doctor Collip, although a considerable response followed the administration of his maturity fraction. The effect of the acidosis-producing hormone is increased by continuous injection over a period of at least five days. When the hormone was administered to normal castrated animals on high carbohydrate or high-fat diets, there was a definite lowering in the level of liver glycogen, but no consistent effect on the level of liver fat resulted.

IN CONCLUSION

Although the level of acetone bodies excreted by normal fasting, male and female rats receiving only NaCl solution, amounted on an average to about one milligram per day, a value of approximately 70 milligrams was obtained with one fasting female animal, which was later shown to be at about the fifteenth day of pregnancy. Experiments will be carried out to study the excretion of this hormone in the urine of rats during various periods of pregnancy. We believe, as do Burn and Ling,[6] that variations in acetonuria depend not alone on the fatty acid-glucose ratio of the diet, but also on the amount of the ketogenetic hormone produced by the pituitary gland. An attempt is also being made to develop an immune serum by the continued injection of this pituitary extract into normal animals, with the object in view of determining whether such an extract can prevent the development of ketonuria during pregnancy in fasting rats.

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DISCUSSION

C. H. Thienes, M. D. (University of Southern California School of Medicine, Los Angeles).—The question arises as to the rôle of this ketogenic pituitary hormone in normal metabolism and its relation to the sex differences in metabolism. It is about equally active in males, females, and castrates, and this fact suggests that the factor involved is not responsible for the sex differences in ketosis of normal fasting animals.

The truth remains, however, that a distinct sex difference in metabolism exists in man and animals. This was first pointed out by Doctor Deuel, and has had ample confirmation in other laboratories. Such differences have long been suspected by clinicians, but without our present clear-cut proof. The ovaries, rather than the testes, are responsible for these differences, at least in animals, for Doctor Deuel showed that the carbohydrate and the fat metabolism of castrated female rats was similar to that of male rats.

More and more evidence is accumulating that the hypophysis regulates all phases of metabolism. Some functions seem to be controlled directly, as growth, but in most instances the secretions of this gland act indirectly through other glands. Examples of the latter secretions are the adrenotropic, thyreotropic and gonadotropic hormones. So far as Doctor Deuel's experiments have gone, the ketogenic extract of the hypophysis seems to act both directly and indirectly through the ovaries.

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Howard F. West, M. D. (1930 Wilshire Boulevard, Los Angeles).—One of the most interesting phases of physiologic and medical research during the past few years has been that of the gradual solution of the mysteries of the endocrine system. The story is obviously far from complete, which makes these observations of Professor Deuel the more interesting.

The effects of insulin, if not all the mechanism of its activity in carbohydrate metabolism, are widely known from its dramatic therapeutic achievements; but the part or parts played by pituitary hormones in the utilization of both carbohydrate and fat is a newer story, only previously guessed at, and one that promises equal interest and importance as it is unfolded.

As evidence is presented of this type, we begin to see more clearly some of the mechanisms involved in many of the metabolic problems encountered so often in clinical work. We begin to think of the metabolic peculiarities of pregnancy, and of the menopause, of many problems connected with diabetes, as well as those disturbances known to accompany primary pituitary disease and those conditions which tend to produce the ketogenic type of acidosis. We wonder whether this, or perhaps similar hormones may not be concerned in the excessive fat storage of certain obesities. This work is particularly suggestive when one remembers that more females than males develop diabetic coma. This increased susceptibility of the diabetic female might well be more marked were evidences of ovarian insufficiency in this group not so frequently observed. As shown in Doctor Deuel's article, the ketogenic hormone of the pituitary is not limited in its effects to the female, although the ovary apparently furnishes a powerful activator.

Recently Goldzieher, Sherman and Alperstein (Endocrinology, Vol. 18, p. 505, July-August, 1934) have presented observations from a somewhat different point of view, suggesting the possibility of a new diagnostic procedure for demonstrating pituitary activity. They determined the quantitative changes in the blood ketones, following a meal of fat. Normally there was a definite increase in the content of acetone and beta-oxybutyric acid, but this increase was absent in the blood of patients in whom there was definite evidence of pituitary deficiency. These changes, following the meal of fat, were quite similar to those following injections of the ketogenic anterior lobe extract. Unfortunately, these authors did not mention the comparative behavior of the two sexes during this procedure, though there were, apparently, considerable individual variations in the blood ketone response. Professor Deuel is the first to note the consistent increased susceptibility of the female to conditions predisposing to increased acetone body production.

Research of this type promises to place our conception of the mechanism of ketosis and the interrelationship of the metabolism of fat and carbohydrate upon a more understandable basis than the oft-quoted expression, "The fats burn in the fire of the carbohydrates."

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Emil Krahulik, M. D. (1680 North Vine Street, Los Angeles).—These experiments are paving the way for others which will have more immediate practical application. That metabolism should respond to changes in endocrine function, is significant. During pregnancy there exists an extremely efficient metabolism with storage of fats on very low calorie diets, which is a response to the endocrine changes occurring at this time. Some explanation will be forthcoming to explain the resistance to prolonged "fasting" in hyperemesis. Those who have been striving to blame the endocrines for eclampsia may eventually be rewarded.

TREATMENT OF LOW GRADE EPIDERMOID CARCINOMA BY MEANS OF RADIUM NEEDLES*

By Orville N. Meland, M. D.
Los Angeles

Discussion *by Edward Leef, M. D., San Francisco; George S. Sharp, M. D., Pasadena; H. J. Ullmann, M. D., Santa Barbara.*

EVER since radium was first used in the treatment of epidermoid carcinoma, it was noticed that some varieties disappeared very quickly, while others were slow in their regression. Some pathologists also saw that those tumors which were poorly differentiated usually responded readily to radium, while those that were well differentiated were less easily affected. Likewise, surgeons operating on a number of patients with this disease discovered that their best results for permanent cure were in the well-differentiated group, while in the undifferentiated group recurrence was frequent and curability was rare. Since Broders brought out his grading of these tumors from the standpoint of degree malignancy, a few pathologists have frequently qualified their diagnosis by the words "radio-sensitive," or "radio-resistant," so that now Broders' Grades 3 and 4 are looked upon as the sensitive group, and Grades 1 and 2 are classed as resistant. The result of this laudable attempt on the part of the pathologist in directing the type of treatment has been to view the epidermoid carcinomas of low grade as not amenable to radiation, but to class them as strictly surgical in scope. It is true that the best surgical results are found in this group, but that they will not respond to irradiation is not correct.

CLINICAL MATERIAL STUDIED

This paper is a study of the epidermoid carcinomas of Grade 1 that we have observed during the past three years. During this time we have

*Read before the Radiology Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

CHART 1.—*Showing Location of the Carcinomas*

Tongue		6
Lip		6
Buccal surface cheek		5
Hard palate		2
Skin		
(a) Nose	3	
(b) Upper lip	2	
(c) Neck	2	
(d) Cheek	1	
(e) Labia	3	
(f) Finger	1	
(g) Ear	1	13
Total		32

seen thirty-two patients with this type of malignancy, and all have had a thorough histological study. Chart 1 shows the location of these carcinomas.

Chart 2 shows the variety of treatment used in all of these conditions. Radium alone, or in some combination with electrosurgery, has been used. Chart 3 indicates results of treatment with different methods.

classed as failures, but were successfully treated by electrosurgery. On the other hand, there were six patients treated by electrosurgery with three recurrences, none of which responded to surface applications of radium. These were extensive lesions, involving bone, and were not suitable for interstitial radiation. All three of them died of their disease. The best results were obtained by the use of radon seeds and platinum needles containing one or two milligrams of radium, plunged into and around the lesions; in all cases there was a successful primary result.

RADIO-RESISTANT AND RADIO-CURABLE LESIONS

The purpose of this paper is to demonstrate the fact that even though a lesion is classed by the pathologist as radio-resistant, it may still belong to the group of radio-curable lesions. The response is much slower to radium than is found in the radio-sensitive lesion, but the primary result is just as favorable. It must be admitted that epidermoid carcinomas belonging to this classification

CHART 2.—*Showing Types of Treatment Used*

Location	No. of Cases	Radon Seeds	Radium Needles	Surface Radium	Electrosurgery				Nothing Done
					Alone	Radon Seeds	Radium Needles	Surface Radium	
Tongue	6	5	0	0	0	0	1	0	0
Buccal surface cheek	5	0	1	2	0	1	0	0	1
Lip	6	0	1	3	1	0	0	1	0
Labia	3	0	3	0	0	0	0	0	0
Neck	2	0	2	0	0	0	0	0	0
Skin—Miscellaneous	10	0	1	1	5	0	0	1	2

ANALYSIS OF RESULTS

In analyzing the results, no attempt is made to indicate the permanency of recovery (that is, the five-year end-results). Rather it is to find out whether these low grade, so-called radio-resistant lesions may be treated by radium with success. The charts show that the response to surface radiation is not as favorable as when platinum needles or radon seeds were used. Two patients treated with radium applied to the surface were may also be treated surgically with equally good results when wide excision is done; but when the disease appears on the buccal surface of the cheek, or on the tongue where a large mutilating operation is required for success, or if it is present in an aged individual in whom the operation and the anesthetic are hazardous, it is justifiable to resort to radium.

Success is largely dependent on technique; either needles or seeds assure the best results. Except

CHART 3.—*Results of Treatment*

Types of Treatment	No. of Cases	Result
Platinum radium needles interstitially	7	All primary healing
Radium seeds interstitially	5	All primary healing
Surface radium	8	Six are well. Two failed but are well after electrosurgery.
Electrosurgery alone	6	Three are well. Three recurred—all died of disease; these were quite extensive and involved bone.
Electrosurgery plus radium needles	1	One well
Electrosurgery plus radon seeds	1	One well
X-ray therapy alone	1	Improved
Nothing done	3	All dead

when operating on the tongue, we prefer needles whenever possible, since the reaction is not so severe; the radiation is more constant and the quality of radiation is harder. In the tongue it is difficult to maintain the exact position of needles for a week, as needles fall out after a few days. Feeding is a problem, and the risk of infection is great. In this location, in our opinion, seeds are preferable. The disadvantage of using needles is the expense of hospitalization, and the discomfort from needles left *in situ* five to ten days, depending upon the radium content of each. Seeds, on the other hand, do not necessitate any suturing and require no prolonged hospital stay. Failures, especially in the mouth, are due to inadequate dosage and such complicating factors as infection, and the endarteritis accompanying lues.

SUMMARY

1. Epidermoid carcinoma of Grade 1 responds well to interstitial radiation either in the form of seeds or needles; despite its being classed as radioresistant, it is still radio-curable.

2. Except when the disease is in the tongue, platinum needles give a preferable result.

3. It is justifiable to use interstitial radiation where surgery requires a major operation, despite the fact that in this group surgery alone gives excellent results.

1407 South Hope Street.

DISCUSSION

Edward Leef, M. D. (Stanford University Hospital, San Francisco).—It has not been our practice to divide the epidermoid carcinoma into different grades of malignancy. Neither have we had the opportunity to treat many cases by interstitially placed radium needles, because our supply of radium is not great and the amount in needles is only a small part of this. However, when we know that we are dealing with an epidermoid carcinoma, it is treated vigorously, either by surgery, radium, or x-ray. Most of the superficial skin lesions which we see are treated with a single large dose of unfiltered x-ray; 3,000 *r* at a single sitting, or up to 4,000 *r* in divided doses over a period of a week. On the lip we use a radium pack with a dose equivalent to 500 milligram hours or more at one centimeter distance. We rarely employ radiation for an epidermoid carcinoma on the back of the hand, for in such a case we have found that we dare not use a dose large enough to eradicate the tumor without the likelihood of producing a damaging result.

It is gratifying to have demonstrated that even though a lesion is classified as radio-resistant, it still may be radio-curable, may be treated as such, and a mutilating operation avoided.

❦

George S. Sharp, M. D. (605 Professional Building, Pasadena).—Doctor Meland's paper further clarifies our knowledge of the general group of epidermoid cancers. He emphasizes the necessity of biopsy as the initial step in the treatment of this group of cancers, and declares that the treatment should be based on the tissue examination, according to their type, grade, and degree of radiation sensitivity.

Epidermoid cancers may arise from any epithelial surface of the body, and no group of cancers have a more diversified behavior and clinical course. It is important, therefore, to further differentiate this group in order that proper therapy may be instituted for the individual case. Microscopic grading of cancer is the first step in the treatment, and Doctor Meland has stated as a general rule that the Grades 1 and 2 are the radioresistant types, and Grades 3 and 4 are radiosensitive. The location of the growth may be a good clinical index as to the grade, and particularly the radiation sensitivity. For example, in the oral cavity, cancer of the lip, the tongue, cheek, gum, or palate are more frequently of the resistant type, that is, of Grade 1 or 2, while cancer of the floor of the mouth, tonsil, pharynx, and extrinsic larynx are more sensitive to radiation. It is interesting to note that the mucous membrane, where the resistant cancers develop, is different from the mucosa of the pharynx. The mucosa of the lip, tongue, etc., is prone to develop leukoplakia, while leukoplakia is not observed over the mucous membrane where the radiation sensitive epidermoid cancers are most frequently found. Therefore, cancer in the presence of leukoplakia may be looked upon as one resistant to radiation. Certain of these clinical features must be considered with the grading, because many times we encounter a Grade 2 cancer on the pharyngeal wall which responds as a sensitive type. And, on the other hand, occasional cancers on the lip which are reported as Grade 1 will demonstrate a maximum response to radiation. Depth of infiltration, type of underlying tissue, and blood supply, may have a more active rôle in sensitivity than is generally understood.

Doctor Meland emphasizes the necessity for varying the treatment and dosage of radiation according to all of these factors. The delivery of a lethal dosage of radiation is the primary problem, and it matters little whether the total dose to the cancer is delivered by x-ray, radon or radium, or all three combined, so long as the application can be made accurately and with a minimum of trauma. For interstitial radiation the radon seeds are the most adaptable for all cases, but the radium needles are equally serviceable for the majority of epidermoid cancers.

The most common cause for failure in the treatment of an early epidermoid cancer is due to an inadequate dosage of radiation.

❦

H. J. Ullmann, M. D. (1520 Chapala Street, Santa Barbara).—Doctor Meland's paper adds evidence in support of a belief, or strong impression, that I have had since 1923. At that time it was generally considered necessary to treat any cancer intensively, and that the first dose or treatment was the important one. My experience both as a clinician and a radiologist made such a definite procedure for all cancers seem preposterous, and in two papers that year and in subsequent publications I urged that cancer in any particular patient be considered a special problem. Then the idea of radiosensitive tumors, identifiable by their histologic structure, was advanced and found to largely hold true for the commoner forms. Again, many exceptions were observed, and tumors with identical growth and histologic pictures were found to vary largely in their response to radiation. Many tumors have been found that, while resistant to one form of radiation and classed histologically as radioresistant, will regress under another. This has been well brought out in Doctor Meland's paper. I have had, within the last year, an excellent example to illustrate the above statements. A woman with a myxofibroma filling one-half the abdomen and found inoperable on exploratory laparotomy was treated with roentgen radiation filtered by two millimeters of copper. Small doses were given daily over a long period with several rest periods, and the tumor has shrunk to one-third its original size and the patient is symptom-free. And yet, myxofibromas, as a group, are not considered at all radiosensitive.

The author's article is timely and should be studied by those inexperienced enough to believe that because one tumor has failed to respond to radiation another of the same type will behave similarly.

❦

Doctor Meland (Closing).—The purpose of the paper is to call attention to the radio-curability of epidermoid lesions that are classed as radioresistant. This is a relative term only. Lesions belonging to this class must, as Doctors Sharp and Ullmann say, be given a lethal dose before recovery will take place.

PHYSICAL THERAPY—CRITICISMS AND SUGGESTIONS*

By H. M. F. Behneman, M. D.
San Francisco

Discussion *by Charles B. Pinkham, M. D., San Francisco; Howard H. Markel, M. D., San Francisco; J. J. Loutzenheiser, M. D., San Francisco.*

IT is an undeniable and distressing fact that the oldest form of treatment known to man is in ill repute with the laity, the physician, and the insurance carrier. Physical medicine in the State of California is in dire need of a housecleaning. Undoubtedly, the industrial surgeon sees innumerable instances of the misapplication and abuse of this adjunct to medicine and surgery. He, as well as the insurance carrier, has just cause to be thoroughly disgusted with this field of therapy. The mere mention of the subject brings to mind visions of delayed recovery or prolonged disability. Why should this age-old form of therapy, fathered by Hippocrates and Aesculapius, appear in this era of modern medicine in such disreputable company, exploited by charlatans and infested with the parasites of various cults?

WHY THE NEGLECT OF PHYSICAL THERAPY

In my opinion, the primary factors contributing to this state of affairs are as follows:

1. The negligence of ourselves, both in our delayed acceptance of this specialty, and in our hasty, often irresponsible, manner of its execution.

2. Its use and abuse by thousands of quacks and charlatans.

3. Failure of accomplishment in many cases, due to faulty diagnosis, improper directions for treatment, its use in the face of contra-indication, overdone or insufficient treatment, and gross negligence and ignorance on the part of an untrained technician.

4. The unfair practice of sending chronic patients to physical therapy just because they fail to progress in every other department of medicine.

5. The mistake of regarding physical therapy as a cure-all. It is far from it, and is merely an adjunct to other methods of therapy.

6. The inexcusable practice indulged in by members of our profession in having a physical therapy technician in the office purely as a means of financial gain.

7. The rank dishonesty of innumerable salesmen representing equally questionable firms, making preposterous claims, inveigling thousands of doctors into the purchase of worthless apparatus, giving lecture courses that are essentially high-pressure selling methods, and, last but not least, charging an enormous price for some nice, shiny, space-consuming trash.

8. The unfortunate fact that the most ignorant layman can buy from almost every dealer any piece of physical therapy apparatus, some of them capable of producing injury, disease, and even death.

9. The still more unfortunate fact that there is no law in this State prohibiting any individual from masquerading as a physical therapist and blatantly announcing it in various manners. There are over ten thousand registered physicians in this State. For every one, there are four to five cultists of various sorts.

10. The regrettable fact that many insurance companies have unduly paid out large sums for physical therapy without results, because of contra-indication or improper treatment.

11. Our own laxity in not being as meticulous in referring patients to a competent physical therapist as we are in referring patients to other specialists.

12. The lack of instruction in medical schools.

13. The paucity of truthful, scientific papers before medical groups.

14. Faulty diagnosis, with irrational directions for treatment.

OTHER FACTORS TO BE CONSIDERED

There are other factors that are just cause for doubt and discouragement. However, I am fully aware of the presence of some excellently trained and competent workers. I recognize the fine work being done, but it is in the minority. The honest, educated technician does her work under written orders from a physician, who gives the diagnosis and outlines the rational procedure.

The important facts are these: The laity is constantly the prey of so-called physical therapists, absolutely devoid of training, without the least knowledge of the fundamentals of medicine. Their money is taken dishonestly, and often their bodies are subjected to ridiculous, painful and harmful procedures. Secondly, the honest, well-trained, competent technician suffers financially and professionally. But last, and most important of all, the medical profession sees the cultist and the charlatan treating patients who should be under the guidance, if not the treatment, of a physician. The whole situation reverts to cast its shadow upon the medical profession.

WEAKNESS OF EXISTING LAWS

Legally, in California at present, any individual possessed of the finances and ambition may purchase and use all types of physical therapy and roentgen-ray apparatus without violation of a single law. He can only be prosecuted if the Medical Board of Examiners, under authority of Section 17, can prove that he treated a diseased condition. Our metropolitan newspapers carry daily columns of advertising under the legal, but deplorable titles of bathhouses, colonic irrigation, nurses, masseurs, physical therapy, and roentgen ray. They are too often the deliberate listing of individuals and establishments that discredit the policing of our cities. When these charlatans are brought before the courts for prosecution, it is almost impossible to get a jury to give a conviction. The colonic irrigationist suavely states he

* Read before the Industrial Medicine and Surgery Section of the California Medical Association at the sixty-third annual session, Riverside, April 30 to May 3, 1934.

was only giving an enema, the masseur was just giving a rub-down, and the clubhouse trainer does all of physical therapy within the law, because the club physician or nurse saw the victim and once took his blood pressure!

This is all illegal, unethical, and uncontrolled practice of medicine. What are we going to do about it? Our ethics do not permit us to become soap-box orators in a fiery crusade against the quack, but we are strong enough as a unit, and as individuals, in the dissemination of ideas to correct this evil. The laity certainly will not correct it.

WHAT IS THE SOLUTION

What is the solution? I am perfectly aware of the existence of the Committee on Physical Therapy of our state society. My understanding of the purpose of that committee, however, is this: To make a survey of institutions and equipment, to promote teaching, to investigate establishments, to encourage presentation of papers and the distribution of literature. I am heartily in accord with that idea, and its able execution by Doctor Hibben and his colleagues.

My plea, however, is for legal regulation, giving the State Board of Medical Examiners the power to examine and regulate under a limited license all physical therapists, confining their activities to work referred and supervised by physicians, with no blanketing-in of those in practice at present. It can be done, but it must be done through the State Legislature. We can do our part as individuals and as a group. You can name captains of your assembly districts, and they in turn can name their workers among the doctors living in that area. The doctor can contact innumerable people. It has to be done soon.

Within a few months the naturopathic group, if successful in the securing of signatures, will present an initiative law as a means of gaining their ends. Physical therapy is flatly stated to be included in the definition of naturopathy. They seek their own governing board and demand in Section 3 that "No law . . . shall . . . prohibit . . . the purposes and provisions herein contained."

This attempt follows the Superior Court decision on January 16 last, of Judge William P. James re: the California Chiropractic Act wherein he ruled that special therapies (included in the field of physical therapy) "is not included . . . under the authority of a license or certificate issued under the Chiropractic Act."

OTHER STATES HAVE ADEQUATE LAWS

Other states have enacted the law that we require. New York has a medical practice act providing for the examination and licensure of physical therapy technicians. Such a technician cannot practice medicine except to treat diseases under the supervision of a duly licensed physician.

Ohio's Medical Board has a strict, limited practice act covering massage. Its qualifications are high, and its penalties for violation are strict.

Minnesota's law states that the practice of massage comes under the jurisdiction of the State Medical Licensing Board.

It is law we need, not just investigation and education. These have been tried with some success, and they may convert the doubtful ones to our faith in physical medicine; but neither do they regulate rational therapy, nor protect the layman from dishonest and grievously harmful procedures. Two examples of the difficulties of accomplishment by education are these:

In 1932 the House of Delegates of the California Medical Association refused a separate section in physical medicine because of the intimate relationship of physical therapy to so many other specialties of medicine. Our desire to give and publish more material in this field was thus promptly stifled. Secondly, the Council on Physical Therapy of the American Medical Association, even now in its desire to educate, has not and does not approve a single school in America for training in this subject.

IN CONCLUSION

My plea for legal regulation of technicians is made before this section because I feel that the industrial physician and surgeons see more good and more lamentable results than any of their colleagues. The medical profession has been attacked and buffeted about by the laity, often to the point of exasperation. Aside from the possible damage to the disabled, the industrial surgeon will have increasing difficulties with patients and insurance carriers if the physical therapists are licensed by any other agency than the State Medical Board.

Some of you never use this form of treatment, some of you may doubt its efficacy, but in either case this mode of therapy is fundamentally sound, and is an integral part of the practice of medicine. Upon this premise, if no other, then you should be vitally interested in legislative action. If this naturopathic initiative passes, it not only includes physical therapists, but provides that those technicians may practice medicine and surgery in all "institutions supported wholly or in part by public funds and to disability compensation."

LAY AND PROFESSIONAL VIEWPOINTS OF PHYSICAL THERAPY

In the mind of the public, the term "physical therapy" signifies electricity, lamps and machinery of various sorts. In the mind of the physician, however, its true definition remains that of body mechanics, massage, and postural training. His conception of a good technician is that of an intelligent graduate in nursing or physical education, with added training in physics, physiology, anatomy, and the fundamentals of body mechanics. Ninety per cent of honest physical therapy needs only good brains and good hands for its execution.

PHYSICAL THERAPY AN IMPORTANT ADJUNCT TO INDUSTRIAL SURGERY

Such physical therapy is an adjunct to industrial surgery. If it continues to drift into the hands of quacks, and, moreover, to become legalized, several will pay for this misfortune, but unfortunately the victimized patient will pay the most. This appeal to you is made because you are the

chief contact between industry and medicine. You can speak of this situation to the companies you represent; they employ a good many voters in California. You can do a great service to maintain individualism in medicine by this effort to place physical therapy technicians under the regulation and control of the State Board of Medical Examiners. You can do it through your county society, through the press, the radio, but mostly by immediate contact with your representative in the State Legislature. Such action on your part cannot be construed as fear that we are losing more medical practice to the laity, but that we are defending one of the vital principles in the heritage of medicine, our moral obligation to bestow honest and rational medicine upon those who seek it from us.

384 Post Street.

DISCUSSION

Charles B. Pinkham, M. D. (450 McAllister Street, San Francisco).—Doctor Behneman has frankly stated many conditions that today exist in California. In so doing he has ridden rather rough-shod over the medical profession because of their lack of interest in physical therapy which, of late years, has been found increasingly beneficial, particularly in industrial surgery.

Doctor Behneman has stated that the definition of physical therapy in the mind of the physician "remains that of body mechanics, massage, and postural training," whereas in the mind of the public the term "physical therapy" "signifies electricity, lamps, and machinery of various sorts." The public mind has developed its definition largely from the advertisements carried in our daily papers, which proclaim that the one who paid for the "ad" (often a licensed chiropractor) offers treatment by electric appliances, including the "electronic" or the "pathoclastic" system, by massage, hydrotherapy, colon flushing, etc.

Physical therapy is not found classed as a medical specialty in the 1934 issue of the directory published by the American Medical Association.

In the title and text of the chiropractic initiative, which is expected will be on the ballot at the coming November general election, reference to physical therapy will be found.

It is often claimed by chiropractors that their group is responsible for the development of physiotherapy. This claim is disputed by graduates of medical schools and by various groups of drugless practitioners other than chiropractors.

Doctor Behneman reminds us that the advertising columns of our metropolitan papers (often under the caption "personal") are crowded with advertisements offering "physiotherapy," "massage," "Swedish movement," etc. According to the police departments, questionable practice is carried on in many of the places so advertised. The kind of "therapy" supplied the patron in some of these establishments has caused metropolitan enforcement powers to draft local regulatory ordinances intended to correct the existing evil.

The California Medical Practice Act makes no specific provision for a license entitling the holder to practice physical therapy, massage, etc. The Act provides for the granting of a drugless practitioner's license. Such license includes all branches of drugless practice.

Doctor Behneman, in commenting further, says: "Physical medicine in the State of California is in dire need of a house cleaning." Yet but few licentiates are aware of the legal obstacles which surround any attempt at the suggested "house cleaning." Section 17 of the Medical Practice Act states that any unlicensed individual who treats, diagnoses, or prescribes for any ailment of the human system, or holds himself out as so doing, is guilty of violation of the Medical Practice Act. Admissible evidence must satisfy the trial judge or jury beyond a reasonable doubt that Section 17 has been violated by the defendant at bar. If guilty the penalty imposed is discretionary with the trial judge. Observance of law is the objective in all prosecutions under this section.

Many licensed chiropractors in this State claim the right to use all forms of physical therapy including electrical appliances of all kinds. Many are removing tonsils, hemorrhoids, etc., by the electrocoagulation method. This group has disregarded the opinion rendered by Attorney-General Webb to the Board of Chiropractic Examiners of January 26, 1926, wherein he held that "electrotherapy, hydrotherapy, and other systems of treatment do not come within the scope of chiropractic practice." Failure to observe this opinion rendered by the Attorney-General resulted in an injunction proceedings against Doctors Steele and Steele, licensed chiropractors of Palo Alto. Superior Judge James of San Jose, after hearing this case, rendered an opinion which sustained that of the Attorney-General. Judge James's decision was printed in full in California and Western Medicine February 19, 1934, page 142. An appeal is now pending before the Appellate Court.

Doctor Behneman mentions certain states wherein the Medical Practice Act provision is made for a license to practice physical therapy, massage, etc. Each of these states, particularly Ohio, claims its regulations of these groups to be most beneficial to public welfare and safety.

A carefully drawn amendment to the California Medical Practice Act, wherein is set up machinery for the licensing of hydrotherapists, x-ray technicians, and masseuse, would correct the conditions stated by Doctor Behneman. Thereby would our citizens be afforded added protection against the unskilled and unscrupulous.

But if the chiropractic initiative becomes a law at the November general election, physical therapy (as defined in Section 2, Subdivision B thereof) will forever be under the jurisdiction of the Board of Governors created in said initiatives.

Because physical therapy is included in the definition of naturopath, Section 2, Subdivision 4, of the Naturopathic Initiative (which also will be on the ballot on the November general election), physical therapists licensed under either of said initiatives will present a most confusing enforcement problem to determine whether said physical therapists will be regulated under the provisions of the chiropractic or naturopathic initiative.

Ponder over the provisions of Section 3 of the naturopathic initiative reading: "No law now or hereafter enacted shall in any way qualify, regulate, restrict, or prohibit the State Association (Naturopathic Association of California) from fully carrying out and effectuating all of the purposes and provisions herein contained."

Howard H. Markel, M. D. (384 Post Street, San Francisco).—I heartily agree with Doctor Behneman regarding the deplorable state of affairs in which physical therapy exists at the present time. A number of very fine and ethical persons, mostly women, have taken courses in eastern training schools for physical therapy and are treating patients in an absolutely ethical manner under the diagnosis of duly accredited physicians. They are anxious to follow the physician's orders in every particular, not only that no harm may be done, but that the greatest good may be accomplished.

In order that these persons may work in this manner, it is necessary for the referring physician to make the proper diagnosis and acquaint the physical therapists with the same, and the physician should also have a very clear idea himself of the treatment that he desires given. Many physicians leave the outlining of the type of treatment for the patient up to the judgment of the physical therapist. In my

opinion the physician himself should know exactly what he wishes instituted and see that it is followed out.

It is very important that at the next meeting of the State Legislature, in January, 1935, that proper legislation be secured and also certain other bills be stopped. The Naturopath Bill is certainly one that should not be allowed to go through. A bill should be introduced which would place the physical therapy technique under the regulation and control of the State Board of Medical Examiners. This is a necessity of greatest importance, in order that proper control is maintained over this important branch of therapy. It is up to public health organizations to see that a proper reformatory act is properly introduced and carried through.

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J. J. Loutzenheiser, M. D. (350 Post Street, San Francisco).—The value of the use of physical methods in treatment has been established by years of scientific endeavor. Medicine is higly honored by the names of John Hunter, Duchenne, Delpach and others. These men substantiated the need of and indicated the various uses for physical therapy by sound scientific experiment.

If there has been a failure in the proper management of physical therapy—and we know that such is the case—such failure is due to the fact that at times we ourselves lack proper knowledge of the indications and technique of this valuable adjunct to both medicine and surgery. This situation makes Doctor Behneman's timely plea for the scientific practice of physical therapy particularly valuable.

It is unnecessary to enumerate the many uses of physical stimuli in the field of purely medical therapy. The intimate relationship of cutaneous and muscle function with both reflex and central nervous mechanism in itself points the way to a large field of endeavor. The relation of the peripheral circulation to its physical environment—the determination of inadequacies in the neuromuscular relationships through electrical stimuli—the catalytic and other action of light components and electrons, and many other physiadjuncts show the necessity for a sound knowledge on the part of the individual who is directing such therapy.

In the field of traumatic surgery it has been obvious for some time that too much has been expected of physical therapy; not because of its lack of value, but rather because of the untimeliness of its application. The question we should ask ourselves is how can we best reëstablish the normal physiological mechanism? In establishing this objective, physical therapy can accomplish its fullest purpose. It is much more valuable to use physical therapy to maintain muscular tone and other normal physiological processes than allow them to become moribund and then attempt to restore them through misplaced credulity in the claims of the manufacturers of lamps and other apparatus.

Needless to say, it is absolutely necessary for the physician or surgeon directing such treatment to know more of the indications and value of physical therapy than the person he directs to do the work. It is asking altogether too much of even the best trained physiotherapist to have a comprehensive knowledge of anatomy, physiology, and pathology without which no intelligent direction of physical therapy is possible. The actual mechanics of treatment can then be safely left in the hands of the physiotherapist.

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Doctor Behneman (Closing).—As I write this paragraph, only six weeks has to elapse before the votes of California determine the fate of the Naturopathic Bill. The public health of our citizens is menaced and the sanity of scientific medicine is in jeopardy of its just control of medical practice. The medical profession has a rational use for physical therapy, but if this bill passes, its indiscriminate use by the laity will surely result in a deplorable situation.

POSITIVE THERAPEUTICS—THE PENDULUM SWINGS TO IT

By L. H. O. Stobbe, M. D.
Salt Lake City, Utah

Discussion *by G. Gill Richards, M. D., Salt Lake City; D. E. Smith, M. D., Salt Lake City; O. J. LaBarge, M. D., Salt Lake City.*

THERAPEUTIC nihilism seems to have dominated the medical profession for the past four decades. The reaction against useless concoctions of herbs and "gun-shot prescriptions" of worthless medicines; the consequent discarding of secrecy and of Latin prescriptions; the growth of drugless cults and of the patent-medicine business; and the general recognition of the importance of forms of therapy other than treatment by drugs, caused not only the downfall of homeopathy, but also caused the pendulum to swing too far toward therapeutic nihilism.

NUMBER OF SPECIFIC MEDICINES LIMITED

Many prominent physicians in nearly all localities today claim that there are only about one dozen really great medicines, few of which are really specific; and that there are a few more of minor importance that can be classed as essential drugs with some value in meeting special indications. According to them the bulk of our pharmacopeia is but of passing historic value. These same men also decry physiotherapy apparatus as a doubtful adjunct; diets and dietitians as a passing fad; baths (as at famous resorts) as a medieval joke; and drugless cults, patent-medicines, and detail men from pharmaceutical houses as a menace to society. In fact, so far have some physicians gone in their nihilistic theories that they can hardly see any good even in their fellow practitioner's attempt at any program of orthodox medicinal therapy in any given case.

In the field of diagnosis no one cares to compete with the modern up-to-date physician, who is trained in pathologic physiology; but in the field of therapeutics this same physician has thousands of competitors, from charlatans to neighborly friends, all of whom claim to know more than he does about managing that pathologic physiology.

EMPTINESS OF THERAPEUTIC NIHILISM

The emptiness of therapeutic nihilism has given rise to much of the therapeutic charlatanism. The general indifference of the scientific modern physician to the lesser niceties and minor adjuncts in treatments has allowed inroads to be made into his practice, and the physician's nihilistic tendencies have turned the public in despair to self-medication, and to seek help elsewhere. Is not the spectacular growth of the patent medicines and the chain drug store octopuses an evidence in itself that medicines do have a value, and that the public does get results with them? How much more effective would these patent and proprietary medicines be if the medical profession understood them, and guided their use intelligently! How often do we find a patent or proprietary drug in the home of our patient, and how often do we find our patient augmenting or even replacing our

recommendations with them? Should we continue to condemn and politely ignore these, or is there a better solution? Nihilism breeds discontentment and a search for something or someone else.

Honesty and truth are prime essentials. Fakirs have no place in ethical medicine. Half-truths and borderline honesty and deceitful practices are not lasting. Falsity is dissipated in the sunlight. When a parent trusts the life of the seriously ill little loved one to the care of a physician, would he dare give placebos and psychological hodge-podge trash! Could such a doctor have a clear enough conscience so that he could sleep at night, or to face the parent shamelessly? The armamentarium of the therapeutic nihilist is so ridiculously meager that if the patient could but suspect it he would be horrified, or at least he would not dare trust his life with him in any serious affliction.

PHYSICIANS SHOULD USE ALL AGENTS AT THEIR DISPOSAL

In the general management of our patients, and in the treatment of their diseases, it is not only our privilege, but also our solemn duty as physicians to see to it that we do not neglect to make application of any of the agents at our disposal that may reasonably be expected to help. We now have a host of methods that are found to be absolutely trustworthy for preventing disease, for alleviating or palliating, and for healing. We can make use of rest, drugs, biologics, serums, vaccines, diets, hot and cold packs or baths, exercise and massage, heat, light, electrotherapy, radiotherapy and x-ray, climate and heliotherapy, mechanical appliances, surgery, general nursing care, health resorts and mineral springs, psychotherapy and social influences, and a thousand miscellaneous procedures.

Accurate clinical observation and actual clinical experience show that drugs are essential in the treatment of diseases, and that even symptomatic pharmacotherapy does have a place in the management of these diseases. The failure of physicians to observe accurately, and to carefully record results obtained from their prescriptions, has caused a lack of advance in therapy as well as an unwarranted loss of confidence in drugs. And the growth of the patent-medicine business and modern drug stores is an evidence of the loss of confidence in the medical profession on the part of the more intelligent public.

NEED OF A THERAPEUTIC AWAKENING

There needs to be a therapeutic awakening. The pendulum now swings from nihilism to an honestly thorough positive therapeutics. Drugs must again come to the foreground in the treatment of human ailments. As Clendening says, after rest, drugs are the most useful and effective therapeutic measures at the physician's command. The field of pharmacotherapy must not wane and retrograde, but must keep pace with all other advancement in medical science. Fantus stands out like John the Baptist in the wilderness begging the medical profession to use drugs, and to compound them properly. Nearly all therapists find hosts of drugs essential in their respective lines. Let us forget therapeutic nihilism.

The medical profession, least of any in the world, should never even think of, nor preach, the doctrine of therapeutic nihilism. Do not even whisper such doctrine to your best colleague. Remember that you can rub the spine, twist the joints, massage, adjust, or hammer patients, if necessary; you can resort to prayer, profanity, or incantations; and you can prescribe diets, vegetable juices, patent medicines, or anything else thought to be efficacious in the particular illness under consideration, as well as any pseudo-medical cult in existence, and you have that privilege and license. Physical therapy, dietetics, pharmacotherapy, "natural methods," osteopathy and all other "pathies"—all are adjuncts in the treatment of disease, constantly with an eye to the prevention of all disease, making the earth a true millenium. But, of course, true ethical medical and surgical practice holds first place at all times when someone's life depends upon you. The treatment must at all times be consistent with the physiology, bacteriology, and pathology of the case at hand.

Let us be grateful that there are such things as specific medicines, semi-specific, helpful and even worthless ones. Let us be grateful, too, that there is such a thing as a laxative pill, or a tonic, or even emenagogues and aphrodisiacs. Therefore, let us shake off our lethargy, forget the negativisms, and resolve to swing to more positive therapeutics.

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DISCUSSION

G. Gill Richards, M. D. (115 East South Temple Street, Salt Lake City, Utah).—I am very happy to have the opportunity to discuss this paper by Doctor Stobbe. It is gratifying to see one of the younger men openly declare himself in favor of the definite value of medical therapeutics. It does not mean that he has joined that large group whose medical therapeutics is guided and enlarged by each visit of representatives of the various pharmacological manufacturers. It shows that in his comparatively few years out in practice he has learned by experience the value of certain drugs and the uselessness of others. He has been open-minded enough to give credit where it belongs, and sufficiently observant to note the unjust criticism of many men who like to class themselves as highly scientific and yet who feel it beneath their professional dignity to concede value to but a very small group of drugs.

I think the doctor is justified in attributing to therapeutic nihilism, which has been very popular in particular groups of our profession, the cause of much of the gigantic growth of patent and proprietary medicines and the like. He should not, however, fail to call attention to that group who learn and dispense every new preparation placed on the market.

I have been very much interested in watching the somersaults that many of our young men exhibit in the early years of their practice. It is possible in many instances to determine the schools from which some of our internes come by their attitude toward medical therapeutics; some stick so closely to the old cut-and-dried remedies that they sometimes fail to take full advantage of many of the more modern methods or drugs, while others are veritable therapeutic encyclopedias.

Experience is a wonderful teacher, and failure to profit by it often spells defeat in medical practice, as in other walks in life.

I think the advice which any of the older successful men in the profession would give to the younger men is to be always observant in the use of drugs or other means of therapy: stick closely to those whose merit

is thoroughly proved; do not be anxious to be the first to experiment with new remedies, nor the last to cast off useless ones; try only those highly recommended by men of experience and high standing, and do not always fall for the high-pressure salesmanship of representatives of pharmaceutical houses. Do not, on the other hand, become so prejudiced against their preparations that you cannot recognize the skill with which many are compounded, and the fact that most of our newer worthwhile preparations are the result of the combined efforts of the successful discoverer of new remedies and the wonderful facilities for their manufacture in the pharmaceutical houses.

☭

D. E. Smith, M. D. (Medical Arts Building, Salt Lake City, Utah).—Doctor Stobbe is to be congratulated, I think, and he certainly speaks the truth when he says, "The general indifference of the scientific (supposedly) modern physician has allowed inroads to be made into his practice."

It is true that many physicians cannot see beyond the surgical possibility of a patient's troubles, and too often a patient is left to his troubles because the doctor cannot find any immediate reason for surgical interference.

I am not wholly in accord with the idea that we should adopt the methods of the quacks or any of the cults, and I am sure that Doctor Stobbe does not intend to convey the idea that we should, but rather to treat our patients whole-heartedly, with the consciousness that they are humans and can understand, at least to a much greater degree than we are wont to assign to them, what we are considering. Too often a patient will come to us and say, "I used to go to Doctor Blank, but he never tells us anything; he thinks I am to do just as he tells me to without any question." As a result, they will go to the one who will take a little more time and explain conditions to them.

May I also join with Doctor Stobbe in his effort to rouse the physician from his medical lethargy and try to instil a better desire for medical thinking, otherwise there is likely to be a continued general decline in medical therapeusis.

Let us all delight in the thought that we are physicians for the body of man, which includes spirit, body, mind, and soul.

☭

O. J. LaBarge, M. D. (305 Medical Arts Building, Salt Lake City, Utah).—Amidst the multiplicity of current papers on the subjects of the etiology, pathology, diagnosis and treatment of varying diverse clinical entities, this paper strikes a keynote in its emphasis upon the necessity for the employment of a carefully prepared plan of treatment adapted to the individual patient and making use of every pertinent therapeutic procedure at our command. Such a plan of treatment must endeavor to relieve, as far as possible, the disagreeable symptomatology which causes the patient to consult a physician; and in every plan of treatment the judicious use of drug therapy will impress the patient with the desire of the physician to alleviate the distressing manifestations of disease. The confidence of the patient in his physician is maintained by therapy of this type, even though the pathological condition present may be chronic and incurable. H. R. Chester has well remarked that "the patient comes to the physician for advice, consolation, and hope. If you give him none of these, you may be an excellent diagnostician and prognosticator, but you are no physician." During the present period of economic distress every practicing physician has been forced to deal with many complaints based upon the factors of anxiety, fear, and economic insecurity. The sedative group of drugs have been of incalculable value in the treatment of this group of patients, and the problem of the care of these patients has again focused our attention upon the advantages of judicious drug therapy.

The self-confident, adequately trained physician of good personality provides a rallying point for the shaken morale of the individual patient, and the possession of a well balanced therapeutic armamentarium is the greatest factor in providing the physician with a fund of confidence in his own judgment and ability. Prompt therapeutic relief of a distressing symptomatology establishes an unshakable foundation of trust and confidence which is of value to both the patient and the physician. The comment of C. F. Martin that "the wisest psychology will never replace quinin and mercury in the cure of certain diseases, nor can it obviate the necessity of operative procedure for a perforated appendix" is a most convincing argument against the theory of "therapeutic nihilism," and should encourage the profession in a resolve to adequately treat every patient with all of the facilities at our command. The failure of the attending physician to provide adequate therapy is often an invitation for well-meaning friends and relatives of the patient to institute treatment (often of a harmful character) of their own, and also often results in the patient listening to the advice of the ignorant and unprincipled. Osler's statement that "in all things relating to disease, credulity remains a permanent fact, uninfluenced by civilization or education," should be a spur to the individual physician in the matter of providing an adequate and satisfying system of therapy for each individual patient. Such a system will maintain the confidence of the patient in his physician, and close every portal of entry to the adventurer and the charlatan as well as provide an effective counterbalance to the incentive for self-medication. In every field of scientific endeavor mysticism is receding before the rising standard of education. Many well-informed lay individuals know more about the practice of medicine today than did our medical predecessors of a century ago. If full information concerning the character of an illness would not be to the best interest of the patient, a thorough discussion of the entire problem with an intelligent member of the immediate family will often prove of immeasurable value to the physician and assist him materially in the proper handling of the case. We must discuss the pertinent problems of diagnosis and treatment with our intelligent patients (or their families) if we are to merit and retain the confidence of our constituencies. Doctor Stobbe has sounded an emphatic warning note in this most appropriate and timely contribution.

COMPULSORY HEALTH INSURANCE

By Frederick L. Hoffman, LL.D.
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IX

ADVOCATES of social insurance for this country, or for any one of its separate States, never fail to betray a colossal ignorance of the workings of the system in foreign countries which have adopted it. Thus the statement that every civilized country except the United States has adopted social insurance is grossly misleading. Canada, for example, has not done so, and neither has a single one of the great South American Republics. Australia has not done so, neither has South Africa. In all these countries strenuous efforts are under way to bring about its adoption

* One of a series of articles on compulsory sickness insurance written for California and Western Medicine by the well-known consulting statistician, Frederick L. Hoffman, LL.D. Articles in this series were printed in previous issues as follows: I, in April, page 245; II, in May, page 361; III, in June, page 411; IV, in July, page 33; V, in August, page 114; VI, in September, page 177; VII, in October, page 262; VIII, in November, page 323.

on the basis of alleged benefits, all of which are more or less questionable.*

HOW CASH BENEFITS INFLUENCE POLITICAL POLICY

Equally mistaken is the statement that none of the countries having established social insurance has abandoned the system after years of trial. That is partly true, but the reason is not because of its inherent merits, but because only a political revolution could do away with a system which confers substantial monetary benefits upon the electorate who have only in part contributed to it. Cash benefits are the main factor appealing for public support, with medical benefits only as a secondary consideration. Hence the arguments of Mr. Chester Rowell and others in favor of the adoption of social insurance in California are entirely without merit, and not supported by evidence gathered by impartial methods of competent inquiry.

SOCIAL INSURANCE A FACTOR IN PRODUCTION COSTS OF A NATION

Any state which adopts social insurance places itself at a disadvantage with every other State with which it is in interstate competition. In its last analysis all social insurance implies an additional burden on the cost of production, with the major portion of the cost paid for by the employer and the taxpayer. It ought to be clearly recognized that compulsory health insurance draws directly on a measurable proportion of the wage-earners' income, to be expended by the State. It was on this ground that the late Samuel Gompers, in season and out, opposed compulsory health insurance as adverse to the best interests of organized labor, believing as he did that labor was entitled to a wage sufficient to maintain the American standard of living which was and is higher than that of any other country in the world. Mr. Gompers believed that the wage earned should be sufficient both to pay for medical attention and to provide a sum sufficient to meet the needs of old age.

COMMENT ON SIR HENRY BRACKENBURY'S CONCLUSIONS

A most important contribution to health insurance literature is an article on health insurance in England by Sir Henry Brackenbury, contributed to the *New England Journal of Medicine* of April 19, 1934. Sir Henry, one of the most influential physicians in English public life, is an outstanding authority on the subject, but his statements are those of a special pleader and must be accepted with reserve. Every physician in England knows full well that health insurance in England has come to stay, and cannot be done away with in view of its political aspects.

In the article Sir Henry reviews the twenty-one years of actual experience of giving and receiving medical advice and treatment in Great Britain under a system of compulsory and contributory health insurance. He points out that the system is limited to all persons employed at manual labor, and all other employed persons with annual incomes of less than £250 are legally required to insure under the Act, these employees paying themselves approximately 40 per cent of the total cost, the employers paying about the same amount, and the State paying the remaining fifth. Over fifteen million persons are insured under the law, and about fifteen thousand physicians have elected to serve them under its provisions.† Most of these physicians, however, also continue private practice. He emphasizes the conclusion that "born of intimate experience, it is acknowledged that any suggestion of the abolition of the scheme would be received by an overwhelming and emphatic protest from the profession and insured population alike." This conclusion is open to question, for there is no evidence in support of it. Resolutions one way or the other are of small value. A thorough and critical examination of the status of panel physicians on the one hand, and the value of panel practice on the other, has not been made. The same conclusion applies to the effect of national health insurance on national health, as to which the evidence is quite unsatisfactory.

Sir Henry calls attention to certain conclusions of the British Medical Association presented to the Royal Commission on National Health Insurance a few years ago, enumerated as follows:

"(*a*) Large numbers, indeed whole classes, of persons are now receiving a real medical attention which they formerly did not receive at all; (*b*) the number of practitioners in proportion to the population in densely populated areas has increased; (*c*) the amount and character of the medical attention given is immensely superior to that formerly given in the great majority of clubs; (*d*) illness is now coming under skilled observation and treatment at an earlier stage than was formerly the case; (*e*) the work of practitioners has been given a bias towards prevention that was formerly not so marked; (*f*) clinical records are being provided which may be made of great service in relation to public health and medical research; (*g*) co-operation among practitioners is being encouraged to an increasing degree; (*h*) there is now a more marked recognition than formerly of the collective responsibility of the profession to the community in respect of all health matters.

"These are described as 'immense gains,' and further experience has not tended to minimize the value of any of them. The only qualification perhaps required is that, except in a few instances, the authorities have failed to make proper use of the potential value of the clinical records made by practitioners. It may be added that in a number of rural areas it has been found possible to maintain medical attention in places which would otherwise have been left derelict."

But none of these conclusions are supported by satisfactory evidence. It is unquestionably true, however, that the old Club practice was atrocious, and that it has been replaced by a better system; but this has no parallel in this country. Whether medical attention under the panel system, as now being given, is satisfactory has not been proved.

* It, of course, is possible that one or more of these countries has adopted new legislation within very recent periods, which has not as yet come to my attention.

† According to the report of Sir George Newman, chief medical officer, British Ministry of Health, London, 1934, the number of insured persons entitled to benefits of insured medical service in England and Wales is 16,071,000, while the number of insurance practitioners is 16,500.

Those who receive it are helpless and as a rule, no doubt, are satisfied with what is given, more or less free of charge. It goes without saying that every panel physician in England may be conscientious, but he suffers from the mechanical limitations of a large practice which precludes adequate attention to individual cases. Such instances of treatment as I have observed myself by personal investigation in England satisfied me that much of the treatment is entirely superficial, and that the therapeutics are mostly palliative rather than curative.

PANEL CLINICAL RECORDS OF LITTLE USE FOR TREATMENT OR RESEARCH PURPOSES

The statement that clinical records are provided which may be of great service in relation to public health and medical research is important, but to my knowledge no use has been made of this knowledge to any extent for treatment or research purposes. The average diagnosis under the panel system is entirely too superficial to justify its use for scientific purposes. Other observations likewise are unsubstantiated by definite acceptable evidence. Everyone, of course, has a right to his opinion in such matters; but, after all, opinion remains opinion, no matter what authority is back of it.

PHYSICIANS WHO FARE BETTER UNDER PANEL PRACTICE

Unquestionably, many poorly equipped physicians have fared better under the panel system than if they were in free competition, but the interests of the better element have been sacrificed for the advantages gained by the inferior type of practitioner. The editorial admits that there are certain drawbacks, particularly the multiplicity of rules and regulations, which to master must impose a tremendous amount of stress and strain on the British practitioner. Sir Henry Brackenbury admits that "there is a tendency to multiply and complicate rules unnecessarily, but in general it may be said that they do not trouble the practitioner much more than the ordinary requirements of the penal code trouble the law-abiding citizens." That, of course, is a mere guess. Conscientious physicians are anxious to avoid conflict with statutory requirements, and the outlook of such difficulties must impair his strictly medical interest in the patient.

AN UNWARRANTED CRITICISM OF AMERICAN MEDICAL ASSOCIATION POLICY BY THE LONDON "LANCET"

In an editorial in the London *Lancet* of June 2, 1934, fault is found with the attitude of the American Medical Association, which at its annual meeting on June 11 would consider the question of introducing some form of compulsory health insurance into the United States, having previously been strongly opposed to health insurance as being a form of socialized medicine; it being claimed that "there are now unmistakable signs that the rank and file of the profession are dissatisfied with this way of dealing with so important an issue." The writer of the editorial finds fault with the report of the Economics Bureau of the American Medical Association which concerns itself chiefly with the German experience in preference to the British, which is most applicable to this country. It is held that "it is by an open-minded study of the British system that an inquirer may most readily appreciate the issues involved in the introduction of compulsory health insurance; and it is surprising that the American Medical Association, in a document prepared to furnish the facts, have dealt so inadequately with what the British doctors have done to place insurance practice on a satisfactory basis." This again is mere opinion, since no evidence is provided from any source showing that the method, on the whole, is really satisfactory to most of the doctors concerned, on the one hand, and to the patients concerned on the other. The editorial expresses the hope that the American Medical Association will give some attention to what has been done in Great Britain to bring insurance practice into harmony with the true traditions of the medical profession. It is, however, my deliberate opinion that this has not been achieved in England, and also that it has not been achieved in Germany.

The final conclusion that "our insurance system was not imposed upon us by a dictator, but freely accepted as a valuable measure of social reform," is inconsistent with the historical facts of the situation. Mr. Lloyd George forced his measure through the British Parliament in bitter opposition to the medical profession and languid interest of the public.

THE AMERICAN MEDICAL ASSOCIATION BUREAU OF MEDICAL ECONOMICS REPORT A VALUABLE CONTRIBUTION

The editorial does scant justice to what is unquestionably one of the most valuable contributions to the literature of health insurance. The original report was published in the American Medical Association Bulletin of April, 1934, and covers the entire issue of about thirty pages. Copies of this report may be had by application to Dr. Olin West, Secretary, American Medical Association, 535 North Dearborn Street, Chicago. The report is the work of the Bureau of Medical Economics of the Association, and is thoroughly well fortified by recent data on every aspect of the subject.

It is observed at the outset of the report that "One of the most striking conclusions that arises from any comparative historical study of sickness insurance systems is their highly experimental character." The numerous changes introduced from time to time make it difficult to present results in concrete form. For example, the German code of sickness insurance covers three thousand sections, independent of countless rules and regulations that bear upon the more important aspects of the problem. In a future issue I hope to review this report in detail, limiting myself on this occasion to a few significant statements. It is said, for example, that

"The most severe criticism of medical service under insurance is not based on the occasional examples of overworked practitioners, with resultant hasty careless diagnosis and treatment, but rather on the atmosphere of suspicion and antagonism, which destroys the very foundations of good service. Payment into a general fund over which the insured has no control (and from which he can get back his money, to which, rightly or wrongly, he believes he is entitled) only by being sick, creates the condition described."

That statement goes to the root of the situation, which is thoroughly unwholesome as regards both the patient and the physician. Since the main objective of health insurance is to provide cash benefits to the insured, he is much more interested in that than in medical treatment. Likewise the insured are entitled to treatment for every trifling ailment which constitute the vast majority of cases treated.‡ Conditions differ, of course, in the various countries and decidedly so concerning matters of medical benefits, which are probably better administered in England, France, and Scandinavia than in Germany and Austria.

MERE IMITATION OF BRITISH OR OTHER SYSTEMS NOT INDICATED

There is no more reason why we should follow the British, or any other precedent, in the matter of health insurance than that we should become a member of the League of Nations simply because most of the other nations have associated themselves with that organization. We should zealously guard against the menace of foreign propaganda which is particularly interested in equalizing economic advantages by increasing the burdens of the public in this country to the same point as they press upon the taxpayers of foreign countries. Foreign propaganda had its inception in an elaborate exhibit made by Germany at the Paris Exposition in 1900 and repeated at the St. Louis Exposition in 1904. Germany, in season and out, has encouraged other countries to adopt the same system to bring about an equalization of the cost of production suffering from the burdens of health insurance without equivalent economic advantages. The propaganda is insidious, and is carried forward in this country chiefly by an irresponsible organization in New York City which provides much of the literary material for its advocacy.

SOCIAL SERVICE WORKERS NOT ALWAYS ANIMATED BY ALTRUISM

Social service workers naturally favor health insurance as providing opportunities for employment on the part of college graduates in social science who can find no place in the established economic system. During the depression we have countenanced countless social and economic experiments for which future generations will have to pay for many years to come. In a frantic effort to offset the results of the economic errors of the past, we are committing greater political errors at the present time in ignorance of economic laws and often of ordinary common sense.

AMERICA NEEDS MUCH OF THE PRESENT ORGANIZATION OF SCIENTIFIC MEDICINE

The disorganization of the medical profession, the standardization of ill-conceived principles and the regimentation of an army of State employees, foreshadow inconceivable disaster to one of the fairest products of the human mind. Medicine ministers effectively to the needs of millions, adapting itself with reasonable success to widely varying conditions. Year after year the profession has made progress, and was never rated as high as it is at the present time. This has been possible only under a system of free competition by which each patient seeks his own doctor and makes his own bargain as to the compensation for services rendered. Wealthy as we are, we are not rich enough to provide for a perfect medical service to one and all at moderate expense. Left alone, the medical profession can be relied upon to adopt methods and means whereby the social benefits of medicine will be increased gradually to the advantage of all concerned.

‡ The annual report of the chief medical officer, Ministry of Health, 1933, contains a table giving an analysis of 125,646 insurance cases. Of these, 29,698 were bronchitis, tonsillitis, nasal catarrh, cold, etc.; 14,905, influenza; 13,915, diseases of the digestive system. Only 905 were tuberculosis; 1,589, organic heart disease; 3,854, diseases of the genito-urinary system; and 221 malignant disease. Since cancer is the second cause of death in England and Wales at the present time, it is obvious that panel medical service is chiefly concerned with trivial ailments and not with serious organic diseases of long duration, involving heavy expense for treatment including hospital service.

THE LURE OF MEDICAL HISTORY*

MEDICAL LIBRARIES†

By MILDRED S. FARROW
San Diego

I

MEDICAL LIBRARIES are as old as medicine itself. The first medical records were written on the tablets of the memory of ancient physicians, and with the death of each a library perished.

MEDICAL LITERATURE IN THE DAYS OF GRAPHIC ART

Six thousand years ago, when graphic art first appeared in India, among the earliest facts to be recorded were those of medicine. The Ayur Veda, written in the Sanscrit of the ancient Hindus, recites the earliest story of disease. In Egypt the tombs of the dead once served in lieu of medical libraries. Here were filed away, and preserved, the records of disease in the well-embalmed bodies of an ancient people.

The archeologists are able today, with the aid of science, to delve into the cause of death and

*A Twenty-Five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of CALIFORNIA AND WESTERN MEDICINE. The column is one of the regular features of the Miscellany department, and its page number will be found on the front cover.

† From the library of the San Diego County Medical Society.

Read before the Altrusa Club of San Diego, September 12, 1934.

have found evidences of such maladies and injuries as fractures, diseases of the bones, nephritis, arteriosclerosis, appendicitis, pleurisy, and various other pathological conditions.

Numerous medical records were handed down to posterity by written works recorded in the form of papyri, and are to be found today in the various libraries throughout the world.

When our European ancestors were still living in caves and clothed in the skins of wild animals, the Chinese, Persians, Hindus, and Mesopotamians had accumulated a large amount of medical literature and had established a number of well-organized libraries.

IN THE DAYS OF ARISTOTLE AND ALEXANDER THE GREAT

In 331 B. C., Aristotle inspired Alexander the Great to establish in Alexandria a great library. This library consisted of about 700,000 volumes and included all of the chief divisions of human knowledge. Medical literature was well represented, and with the aid of this vast collection of medical literature and allied sciences, the great medical school of Alexandria was developed, with its clinics, laboratory, and museum. Here were found many leading men of medicine such as Discordes, the medical botanist; Saramus, the gynecologist, obstetrician, and pediatrician; Galen, the experimental physiologist; and Herophilus, the anatomist.

With the destruction of the library at Alexandria, due to religious fanataeism, learning declined and marked the decay of the culture of those responsible for its destruction.

THE SERVICE RENDERED BY THE SARACENS

The Saracens in Bagdad and Cordova helped to preserve the Greek classics for posterity, and there is no doubt that had it not been for this literature, much of the writing of Hippocrates and Galen would have been lost.

With the beginning of the Christian era many of the ancient writings were preserved in the monasteries, and formed the nuclei for later libraries.

At the medical school of Salerno, founded in the eighth century, a great medical library was established, containing the best ideals in medicine derived from the Greeks, Romans, Saracens, and the Jews. This medical literature influenced medical thought and practice for over a thousand years.

THE FIRST PRINTED TEXT IN MEDICINE

As time went on, universities multiplied, and with them medical libraries grew in number and in size. A great impetus to the growth of libraries began with the art of printing. The first medical text was printed in 1457 and a number of medical books were put to press in 1467, 1470, 1478, and 1525. Many of these books are today to be found in American medical libraries. The workmanship on these books was excellent, as can be seen from their fine state of preservation. In those days there was not the incentive of quick profits that is present in our age, and the artisans put forth their very best efforts in their work. This fortunately proved to be of great value to the medical profession in the excellent preservation of ancient medical literature.

After the discovery of America in 1492, public interest began to turn to the New World, and with the military came the clergy, who often served as medical advisers, as well as spiritual guides; and it was not long before universities were founded which included medicine in their curricula, while in their libraries were to be found collections of medical books.

THE FIRST MEDICAL SCHOOL IN THE AMERICAS

At Lima, Peru, in 1551 Charles the Fifth established the San Marcos University, the oldest institution of learning on the American Continent. Instruction in those days was largely confined to the arts, theology, medicine, and law, with that of theology occupying a prominent position and the rest, to a more or less degree, being subordinate. As time went on, scientific research began to occupy the attention of scholars, with the result that science was given a greater place in the curriculum.

FIRST LIBRARIES IN NORTH AMERICA

In North America, we find that library history began with the settlement of Jamestown, when it was decided to establish a college, and a gift of books was made to the prospective institution; but on account of trouble with the Indians the library failed to materialize.

Farther north, efforts to create a library were more successful. Harvard College was founded in 1636, and years later Reverend John Harvard, by provisions of his will, bequeathed three hundred books to the college. Among other libraries was that of the William and Mary College, commenced in 1692. History informs us that in 1700 the Yale Library had its inception when each member brought a number of books and presented them to that body, laying them on the table with some such words as these: "I give these books for the founding of a college in this colony."

The first strictly medical library in the colonies was that of the Pennsylvania Hospital, organized in 1762, and was started by the gift of a book by Dr. John Fothergill.

FIRST MEDICAL SCHOOL LIBRARY IN THE UNITED STATES

The first medical school library in the United States was established at the College of Medicine of the University of Maryland in 1813.

The earliest medical periodicals were the *Medical Repository,* published from 1797 to 1824; the *Philadelphia Medical Museum,* running from 1804 to 1811, and the *Philadelphia Journal of the Medical Sciences,* which was started in 1820. Five years later the title was changed to the *American Journal of the Medical Sciences,* and under this name has continued to the present day.

THE LIBRARY OF THE SURGEON-GENERAL OF THE UNITED STATES ARMY

The literature of a science so progressive as that of medicine and its allied subjects loses its value after a very limited period, and hence many of the books have little save an historical interest. For this reason, only a few institutions with the necessary funds and facilities for such preservation undertake to obtain and care for the great mass of medical literature of the past. One library in particular, in the United States, has volunteered to play the part with distinguished success. That one is the library of the Surgeon-General's office of the United States Army, Washington, D. C.

Under the direction of the late Dr. John S. Billings, the largest collection of medical literature in the world has been gathered, classified with a catalogue covering over 905,000 volumes and thousands of pamphlets, and this is a monument of biological research; and this work is being continued by Doctor Billings' successors.

SOME AMERICAN MEDICAL LIBRARIES

The majority of medical libraries are connected with medical departments of the various universities and independent medical schools. In the American Medical Directory, 232 American medical libraries are listed, ranging in size from 500 volumes to 905,000 volumes.

The library of the College of Physicians and Surgeons of Philadelphia is credited with 173,021 volumes; Harvard University Medical School Library has 59,524 volumes, and the Medical School Library of Columbia University possesses 58,133 volumes.

Among the various medical society libraries are those of the Medical Society of the County of Kings, Brooklyn, New York, with 131,837 volumes; the New York Academy of Medicine Library of 188,000 volumes, and the Rhode Island Medical Society Library and the Boston Medical Library, with 31,000 volumes and 165,841 volumes, respectively.

Prominent among the notable medical libraries of the Middle West is the Cleveland Medical Library, with 48,000 volumes; the John Crerar Library, Department of Medical Sciences, with 90,000, while in the south is the library of the Medical and Chirurgical Faculty of the State of Maryland, containing 50,000 volumes, and the William H. Welch Medical Library with 110,000 volumes.

MEDICAL LIBRARIES ON THE PACIFIC COAST

Farther west on the Pacific Coast, in San Francisco we have the Lane Medical Library with 78,000 volumes, the University of California Medical School Library with 31,600 volumes, and the library of the San Francisco County Medical Society, holding 14,000 volumes.

In Los Angeles, the Los Angeles County Medical Association (formerly the Barlow Medical Library) has a library of 20,000 volumes, and the University of Southern California Medical School Library offers 6,791 volumes.

The library of the San Diego County Medical Society consists of over 6,000 volumes.

In addition to these libraries are the various county medical society and hospital libraries scattered throughout the State.

THE LIBRARY OF THE SAN DIEGO COUNTY MEDICAL SOCIETY

The San Diego medical library was organized in 1915, being housed at that time in a very small room in what was then the Timken Building. Since that time the library has been moved twice, until it now occupies the entire south wing of the top floor of the Medico-Dental Building. The rapid growth of this San Diego medical library was largely due to the untiring efforts of its enthusiastic supporters, who have contributed generously of their time and money, so that from a few volumes it has grown to a library of over 6,000 volumes, eighty-five current medical journals and many bulletins from various parts of the United States, Hawaiian Islands, and Porto Rico.

1410 Medico-Dental Building.

(To be continued)

CLINICAL NOTES AND CASE REPORTS

VISCEROPTOSIS

By William Fitch Cheney, M.D.
San Francisco

THE following case history calls attention to a type of disease not unusual, and yet, apparently, not recognized as often as it should be.

REPORT OF CASE

A woman, age forty-six, seen in September, 1934, had suffered from trouble with her digestion for eight or nine years previous. She had a good appetite, but after eating, sometimes immediately, sometimes two or three hours later, she felt too full and became greatly distressed by this sense of distention. There was no severe pain, but a constant, dull ache. Sooner or later she began to belch, and finally, after expelling much gas, obtained relief. Then she was comfortable until she ate again, but trouble recurred promptly as soon as she filled her stomach. Because of this sequence, she had practically starved herself, refraining from food to obtain comfort; and her weight had thus gradually decreased about fifty pounds since the onset of her illness. Two capital operations had been performed to cure her—first, the removal of her gall-bladder, and several years later removal of her appendix, uterus, both tubes and ovaries. Yet these operations had made her no better, but rather worse. Numerous teeth had also been extracted without benefit.

This woman presented a characteristic appearance that suggested at once the diagnosis. Five feet six inches tall, she weighed only 121 pounds. Tall, slender, emaciated, her figure was the typical one of visceroptosis; and when, in addition to her peculiar build, she was found to have a prolapsed and palpable right kidney, and an abdomen more prominent in the lower than in the upper half, the findings became diagnostic.

Gastric analysis showed an abundance of thick mucus in her fasting stomach contents, and in each extraction after a test-meal; and also a very deficient secretion, the total acidity being never above fourteen and the free HCl never above four. X-ray films proved that the stomach was situated low in the abdomen, with the lesser curvature below the level of the iliac crests as the patient stood erect. There was also demonstrated a delay in emptying time.

COMMENT

Case records accumulated during a number of years past contain more than a few instances of this sort. The real cause of such symptoms as this patient described appears to be the gastroptosis which interferes with both the motor and secretory functions of the stomach. Some of these cases are congenital, some of them acquired; they occur in either sex, but more often in women than in men; and they may appear at any age. However, the stomach is never the only abdominal organ prolapsed, and gastroptosis forms only one part of a general visceroptosis, frequently associated with neurasthenia, as first described by Glenard in 1885.

The story given of long-standing digestive disturbances, with the symptoms often vague and indefinite and not corresponding to any type of gastric disease; with constipation, lack of energy, poor nutrition and inability to put on weight, ought at least to suggest what is wrong. When, in addition, there is also the evidence obtained by physical examination—the long, slender body, the lack of adequate fat, the prolapsed right kidney and frequently the prominence of the lower abdomen, even when the patient is lying on the back—the impression previously created receives further confirmation. Add to this a gastric analysis showing anomalies of secretion and impairment of motility, but no proof of intrinsic organic disease; and finally, the demonstration by x-ray films of a stomach lying low in the abdomen or even in the pelvis and emptying slowly, and the original conjecture as to diagnosis becomes a certainty, upon which proper treatment can be based.

It is surprising how many of these patients with visceroptosis give in their history an account of operations done by a surgeon for gastric ulcer, cholecystitis or appendicitis to cure their disturbances of digestion; or by a gynecologist, who has removed uterus or ovaries to relieve a chronic backache; or of the fitting of glasses by an eye specialist to prevent further headaches; and all without benefit because the view taken has been too narrow and the condition underlying all these manifestations has not been appreciated. That such errors are made appears to prove the statement at the outset that gastroptosis and visceroptosis are not recognized as often as they should be.

Much good can be accomplished in these cases, however, by non-surgical treatment. This should include a well-fitted corset or belt to give abdominal support; rest in bed or off the feet for at least twelve hours out of the twenty-four; rest lying down for a half-hour after each meal, on the right side, to get the food started on its way out of the stomach; a soft, non-residue diet; nux vomica before each meal to stimulate motility; and cascara at bedtime, if constipation forms a part of the picture, as it frequently does. By such measures most patients gradually obtain both comfort and increased usefulness.

After one month's treatment on such a plan, the patient who forms the text for this clinical note reports: "I have no more gas and, by following the diet recommended, everything I eat agrees with me."

210 Post Street.

A MEANS OF APPLYING HEAT TO CIRCUMSCRIBED AREAS

By H. H. Parsons, M. D.
Grass Valley

A PATIENT recently treated for a staphylococcic otitis externa complained of the bulkiness and weight of a hot-water bottle, claiming that its pressure caused pain. In order to overcome this difficulty, I devised the small reflector described below, which I have found to be very efficient, inexpensive, and easy to construct, and that it delivers the proper amount of heat where it is needed, and not over a broad area.

I took an ordinary "dog food" can, which is three inches in diameter and four and one-half inches long, and cut out one end with a can opener which crimps the cut edge, making a rounded lip to the can. From the center of the other end of the can, I cut out a piece of tin one and one-sixteenth of an inch in diameter, or of a size that would just allow the screw-end of an electric-light bulb to pass through. I then obtained an electric-light socket, with cord and plug attached, and a 15-watt light bulb.

The bulb, put into the can so that its screw-end would project through the small opening, was then screwed into the socket, and the outfit was complete. The can may be covered with any material desired, but this is unnecessary.

For use, the light is turned on, the can placed over the ear so that the end of the can rests against the head, thus making an almost air-tight heating chamber. The heat from a 15-watt light is just right, is easily borne, and the can does not get too hot to handle. A twenty-minute application, four or five times a day, gives remarkable relief and hastens resolution; and there is no pressure made on tender parts.

This reflector may be used for many conditions, such as boils, otitis media, mastoiditis, and breast abscess, and to keep eye-compresses at the proper temperature.

Should the heat become too great, simply lift the reflector off for a few seconds, to correct the temperature.

Different sizes of cans may be used to meet different conditions, and the can may be belted on in places where it would be difficult to hold it with the hand.

128 Neal Street.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

ON OBESITY

PATHOGENESIS AND DIAGNOSIS

R. A. Kocher, M.D. (P. O. Box 926, Carmel).

It has been customary to classify obese cases as endogenous and exogenous. I prefer the terms "simple" and "endocrine" obesity. Simple obesity is solely the result of overindulgence in food. Endocrine obesities include a considerable group of cases of glandular dysfunction presenting adiposity as a symptom. However, adiposity is not a necessary accompaniment, and these glandular dystrophies each present their own symptom complex. All cases of obesity are exogenous in the sense that accumulations of stored fat cannot result unless the total calories in the diet exceed the caloric energy produced in the body.

Taking all types of obesity, there is abundant evidence to show that over 50 per cent of the cases present a hereditary tendency. Let us first consider simple obesity, and illustrate the same with a case history.

Simple Obesity.—A woman, age fifty-six, housewife (does no work, has two servants); complaint, shortness of breath on exertion, headache, tension in back of the neck (these patients seldom consult a physician for esthetic reasons alone). General health in the past has always been good, has had no serious illness. Menstrual history normal; has had three children, all living and well. Until the age of thirty, her weight was quite constant, at about 115 to 118 pounds. There was then a gradual increase up to the age of fifty, when her weight reached 195 pounds, remaining about the same ever since. She says she has been "comfortably fat" for about twenty years and did not associate her shortness of breath, and headaches, which developed only during the last six months, with her obesity. Heart, transverse type, considerably enlarged in all dimensions, but chiefly to the left; rate 80, no disturbance in rhythm. Blood pressure: systolic 180; diastolic, 110. There is a marked acceleration in heart and respiratory rate after moderate exercise, with delayed return to normal. Fat distribution is fairly even, most marked over abdomen, but with absence of excessive mammary, trochanteric or extremity masses; no supraclavicular pads, nor infiltration areas.

Urine: Specific gravity, 1010; few hyaline casts. Blood count, normal. Basal metabolism, normal.

This patient reported that, while she had a good appetite, she considered herself a light eater. On close questioning, it was learned that she was a connoisseur of food, preferring French cooking; likes gravy, bread, butter, olive oil, heavy soups, pastry and the like. It is apparent from this that while she may have consumed a small bulk, she selected those foods of high caloric content. Water and cellulose-containing foods, as vegetables and fruits, were not much in evidence in her menu. For exercise, she reports that for years she seldom indulged in anything more strenuous than bridge.

The response shown by such patients to a course of restricted caloric intake is often a diagnostic test as to the presence of any underlying metabolic disturbance. This patient on a caloric intake of 1,000 daily, lost weight at the rate of three to four pounds per week; which I consider the upper limit of safety where such a course of reducing is to be continued over a period of weeks or months. When this patient had lost about twenty pounds in weight, the systolic blood pressure had dropped to 155 to 160, and remained at this level, even though the patient subsequently lost fifteen additional pounds. A similar blood pressure response has been observed in other cases.

This case is presented as more or less typical of simple or overeating obesity. Any physician is familiar with similar cases in his own practice. Of particular significance are the symptoms of distress characteristic of a degenerative process in the cardiorenal system, an almost inevitable accompaniment or penalty of prolonged obesity. "We dig our graves with our forks," as some wag would have it. With advancing years there is a gradual decline in the level of the oxidative processes of the body. With the years there is likewise a decreasing inclination for bodily exercise. With most persons there is a nice adjustment of appetite calling for less food, especially of the richer varieties, which keeps the body weight at a fairly constant level over a period of many years. With others, this unconscious adjustment of appetite to actual food requirement is not so apparent, and there is either a constant battle against the increasing tendency to gain weight or a serene overindulgence in food with a complacent acceptance of the resultant corpulence. Perhaps it is a matter of morals. Joslin, at least, hopes that the time will come when it will be considered immoral to be fat.

By what mechanism obesity, over a period of years, produces pathological degenerative conditions such as diabetes, nephritis, arteriosclerosis, is not clear. Not all cases result in degenerative disease. It may even be argued with some degree of conviction that such degenerative processes, which appear only late in the course of obesity, may have a common origin with the latter in some as yet little understood aberration in cellular metabolism. This is a fascinating field for speculation, but should prove a fruitful field for investigation.

Obesity with Glandular Disturbance.—Passing now from simple obesity, let us consider, briefly, those cases accompanied with glandular disturb-

ance. The classical example is hypothyroidism, or myxedema, where the pathologically lowered metabolic rate is probably the chief eiologic agent in the accumulation of fat. Here the response to treatment with thyroid gland, or its derivatives, becomes a strong confirmatory diagnostic agent, not only in the weight response, but in the prompt improvement in many of the other related symptoms of this deficiency disease. Restrictions in diet may or may not be necessary in the correction of weight in these cases. The obesity is only one of the symptoms it is aimed to improve. With the increased metabolism produced by thyroid therapy, caloric restriction of the diet is generally not indicated.

In the remaining types of endocrine obesity, especially in those where there is no accompanying disturbance in thyroid metabolism, the genesis of the glandular dysfunction with respect to the adiposity is not always so apparent. The common types are associated with deficiencies in the gonadal system, and referred to as dystrophia adiposogenitalis, eunuchoidism, pituitary disease, etc.; the polyglandular cases falling under such headings as thyropituitarism, pituitarothyroidism, etc. By no means all of these cases show obesity, or even localized adiposity. The symptomatology is very diverse, and for a full discussion the reader is referred to works such as Engelbach's "Endocrine Medicine." For the purpose of the present discussion, it may suffice to point out the characteristic fat distribution in obese cases of pituitary involvement. The girdle adiposity of adiposogenital pituitarism is a classical example. The peculiar and enormous trochanteric pads of fat in certain of these pituitary obese cases is typical. Since the basal metabolism of the majority of these cases is normal, the treatment as far as the obesity alone is concerned, is dietetic, physiotherapy, exercise, in combination with the indicated glandular therapy.

Anyone having experience with the treatment of obese cases occasionally finds a patient who, in spite of a normal basal metabolism, and though placed on a reduced caloric diet and increased physical activity, fails to lose weight over a considerable period of observation. A certain percentage of such cases will be found, by making a careful check of the water balance, to be retaining fluid in the body, along with the loss of body fat. There remains, however, a certain small minority in which this is not the case. Such cases suggest that there may be some undiscovered disturbance in the chemistry or physiology of energy exchange. It has been suggested that the basal metabolic rate, as generally taken, is not a true index of the twenty-four-hour metabolism. If this is true, a fluxuation, such as a depression of the B. M. R. during sleep, would explain the condition. However, no adequate twenty-four-hour determinations of energy exchange have ever been made in such cases to prove or disprove this point. These cases likewise respond to a reduced caloric intake by a loss in weight, provided the diet is sufficiently restricted. Possibly the use of drugs of the dinitrophenol group should be restricted to obese cases of this type.

DANGERS AND TREATMENT

W. D. Sansum, M. D. (The Sansum Clinic, Santa Barbara).—People would be more interested in maintaining a normal body weight if they could be made to realize the seriousness of overweight. Usually they either ignore the excess weight, or are interested merely in reducing from the standpoint of appearance. This indifferent attitude is maintained until some accident attributable to the overweight occurs. We believe that a frank statement of the dangers of overweight is the most convincing argument in favor of adequate treatment.

THE DANGERS OF OBESITY

The Span of Life Is Shortened by Obesity.—Prominent life insurance companies have collected comprehensive statistical data which demonstrate the risk of obesity from an insurance point of view. These show that for each pound a person is over- or underweight, the average expectancy of life is decreased by one per cent. For example, a woman forty years of age, five feet six inches tall with shoes, should weigh about 138 pounds dressed. At this weight, her life expectancy would be twenty-eight years, according to actuary tables. If, however, at this age she actually weighs 188 pounds—that is, she is fifty pounds overweight—her life expectancy is reduced to fourteen years. Instead of expecting to live to be sixty-eight, she only can expect to live to be fifty-four years of age.

The Heart Is Usually Enlarged.—It is believed that the heart must enlarge to carry on efficiently in the presence of the excess body weight. We have made thousands of measurements, by means of the orthodiagram, of the plane surface of the heart shadow. We have found this enlarged in most obese patients, particularly those whose obesity is of long standing. This enlargement of the shadow, particularly of the transverse diameter, may not mean permanent cardiac damage, because we frequently see it recede after body weight has returned to normal. Although the orthodiagram is the best simple method of estimating cardiac size, it does not give sufficient information regarding the volume of the heart. Further studies with the dialectograph may yield valuable information along this line.

The Blood Pressure Is Usually Increased.—Most of our obese patients have had hypertension. Similar to the enlargement of the heart, this condition might be expected from mechanical considerations. Each pound of excess body weight is said to require about one extra mile of small blood vessels. Increased pressure would be necessary to carry blood through this extra network of blood vessels. As the blood pressure rises, further enlargement of the heart is necessary in order to perform the additional work required. Therefore we see the largest hearts in obese patients with elevated blood pressure. In our own series of patients, blood pressure readings have fallen as body weight approached normal, even when the hypertension was not obviously secondary to the obesity. Similar observations upon the association

of overweight and hypertension have been made at the Mayo Clinic.

Arteriosclerosis Eventually Follows.—There is considerable evidence that hypertension from any cause is associated with varying degrees of arterio- and arteriolosclerosis.

Obese Individuals Have a Predisposition to Diabetes Mellitus.—Obesity is so commonly followed by, or associated with, diabetes that leading authorities consider it to be one of the most important factors in the causation of this serious disease. More than one-half of the adult patients in our own diabetic series have been overweight, have had enlargement of the heart and high blood pressure at the beginning of their treatment.

Obesity Is a Cause of Lowered Body Resistance.—It is said that general body resistance is usually lowered in the presence of obesity, so that obese individuals are more susceptible to such common diseases as pneumonia and influenza. The prognosis is more grave in the obese than in the normal persons.

Obese Patients Are Poor Surgical Risks.—Cholecystitis, with or without cholelithiasis, occurs more frequently in obese than in normal persons. If surgical intervention becomes necessary, surgeons attempt such operations only with great reluctance when some emergency demands immediate operation.

TREATMENT

Authorities believe that overweight in adults is usually preceded by overeating and underexercising. Dysfunction of the glands of internal secretion probably plays a rôle, the exact nature of which is not yet fully understood. We use thyroid by mouth when the basal metabolic rate is low, carefully watching the clinical symptoms and doing repeated basal metabolic rates. Regardless of the type of obesity, exercise and diet form the two most important factors in its treatment. Weight should not be lost too rapidly. We do not advise a loss of more than ten pounds per month, and in some instances even a slower rate of loss is advisable.

Exercise.—The amount and type of exercise will depend upon the individual patient's general physical condition. Exercise should be prescribed only after a careful physical examination of the patient, because of the frequency of heart, blood vessel, and kidney complications in obese individuals. In the presence of heart failure, or impending heart failure, patients should be kept in bed. Massage and bed exercises are valuable in such cases to maintain normal muscle tone. Walking is not only one of the cheapest, but also one of the best forms of exercise. Patients usually know how far they can walk without undue fatigue. The distance walked each day should be increased gradually. Golf, horseback riding, tennis and swimming are entertaining types of outdoor exercise. Supervised gymnasium exercises, associated with reducing massage, are valuable if the patient can afford the extra attention. Some cases require orthopedic adjustments before walking or other exercises should be undertaken.

Diet.—The diet should be carefully planned in order not to violate any of the accepted principles of nutrition. It should contain an adequate amount of protein, carbohydrate, minerals, vitamins, and residue. The number of calories allowed per day will vary with individual needs, and will usually range from 800 to 1,200. This is intentionally planned to be below basal requirements of the patient.

The quantity of protein should be at least a gram per kilogram of the average between ideal and present weight. We rarely use less than 75 grams of protein per day, and often as much as 90 to 100 grams. These higher protein diets satisfy the appetite, have a greater specific dynamic action, and are more apt to keep the patient in nitrogen balance. The protein can be obtained from skim milk, cottage cheese, eggs, lean meat, fish, and fowl.

The diet should contain as much carbohydrate as it is possible to include within the caloric requirements. It is believed that a liberal amount of carbohydrate in the diet assists in the burning of body fat. Carbohydrate can be obtained from the low percentage fruits and vegetables, and milk.

A liberal quantity and variety of vitamins are assured by generous servings of the low percentage fruits and vegetables. A small amount of butter or cream is usually included in order to provide some of the valuable fat-soluble vitamins. The milk and eggs also supply some vitamins.

Mineral elements are supplied mainly by the milk, fruits, and vegetables; but we sometimes add such mineral substances as calcium and iron.

A liberal use of the lower percentage fruits and vegetables provides the necessary residue or bulk, facilitating adequate elimination.

The following diets and sample menus, arranged by our dietitian, Miss Ruth Bowden, illustrate the type of diets used in this clinic. Patients are advised to weigh their food whenever possible, otherwise approximate measures are used. Every diet is arranged to meet individual requirements, but in general they range from 800 to 1,200 calories daily.

* * *

FOODS ALLOWED:

Soup—Clear broth and vegetable soup, without rice or barley.

Meat—Lean meat (all kinds except fresh pork), fish and fowl (except goose).

Egg—One daily prepared without fat.

Milk and Milk Products—Skim milk, buttermilk, cottage cheese, and small quantity of butter *or* cream.

Vegetables—Asparagus, beet greens, broccoli, Brussels sprouts, celery, chard, chicory, endive, lettuce, mushrooms, mustard, rhubarb, spinach, summer squash, turnip greens and watercress; cauliflower, cucumbers, kohlrabi, radishes, string beans and tomatoes; French artichoke, chayote, cabbage, eggplant, leeks, okra, green onions, green peppers, pumpkin, rutabagas, winter squash and turnips; beets, carrots, celery root, onions and oyster plant; parsnips and peas.

Fruits—(fresh, dried or waterpacked)—Blackberries, cranberries, gooseberries, guavas, limes, loquats, melons and strawberries; apples, grapefruit, huckleberries, lemons, loganberries, mulberries, oranges, papayas, peaches, pears, plums and raspberries; apricots, cherries, nectarines, pineapple and pomegranates.

Cereals and Cereal Products—Small quantity of bread—one to two slices daily.

Beverages—Clear coffee or tea, skim milk, buttermilk and tomato juice.

Miscellaneous—Saccharine, saxin, gelatine, mineral oil salad dressings and cooked dressings without oil or butter.

FOODS NOT ALLOWED:

Soup—Cream soup and any rich soup.
Meat—Fresh pork, goose and all fat meats.
Milk and Milk Products—Whole milk, cheese except cottage cheese, cream and butter except small quantity.
Vegetables—Potatoes, corn, sweet potatoes, lima beans and all dried beans.
Fruits—Crabapple, figs, grapes, mangos, persimmons, prunes, bananas, grape juice, all fruits canned with sugar, dried raisins, dates and figs.
Cereals and Cereal Products—All (including hominy, spaghetti, rice, macaroni, etc.) except the small quantity of bread allowed.
Concentrated Sweets and Starches—Sugar, jelly, jam, honey, candy, dried raisins, dates, desserts, pastry, cake, ice cream, cornstarch, tapioca, sago, etc.
Beverages—Whole milk, all sweet beverages and alcoholic beverages.
Miscellaneous—Avocado, chocolate, nuts, peanut butter, olives, lard, lard substitutes, bacon fat, gravies, and all salad dressings, except mineral oil and cooked dressing without oil or butter.

* * *

800 CALORIE DIET (approximately 80 grams protein):

	SAMPLE MENU
Breakfast	*Breakfast*
Fruit (without sugar) average serving (4 ounces).	Sliced oranges, one medium orange.
Egg one *or* crisp bacon, three slices, *or* lean ham, one small slice (one ounce).	Poached egg, one.
Bread, one-half slice.	Toast, one-half slice.
Butter, one-half square.	Butter, one-half square.
Hot beverage (clear).	Coffee (clear).
Luncheon	*Luncheon*
Cottage cheese, two ounces, *or* lean meat, fish *or* fowl, two ounces.	Cottage cheese, two heapling tablespoonfuls.
Vegetables, two or three servings.	Combination vegetable salad (lettuce, tomatoes, cucumbers, asparagus and green pepper).
Fruit (without sugar), average serving (four ounces).	Mineral oil dressing.
Skim milk *or* buttermilk, one-half pint.	Baked apple, one medium.
	Skim milk, one glass.
Dinner	*Dinner*
Clear broth, tomato juice *or* vegetable soup.	Consommé.
Lean meat, fish *or* fowl, two ounces.	Lean roast beef, small slice (two ounces).
Vegetables, two or three servings.	Brussels sprouts, three or four.
Fruit (without sugar) average serving (four ounces).	Banana squash, three tablespoonfuls.
Skim milk *or* buttermilk, one-half pint.	Lettuce salad.
	Mineral oil, French dressing.
	Pineapple (fresh *or* waterpacked.
	Skim milk, one glass.

* * *

1000 CALORIE DIET (approximately 85 grams protein):

	SAMPLE MENU
Breakfast	*Breakfast*
Fruit juice (orange *or* grapefruit), one glass.	Orange juice, one glass.
Fruit (without sugar), one serving (five ounces).	Applesauce, one large dish (five ounces).
Egg one *or* crisp bacon, three slices *or* lean ham, one small slice (one ounce).	Crisp bacon, three slices.
Bread, one slice.	Toast, one slice.
Butter, one-half square.	Butter, one-half square.
Hot beverage (clear).	Coffee (clear).
Luncheon	*Luncheon*
Cottage cheese, two and one-half ounces *or* lean meat, fish or fowl, two and one-half ounces.	Cold roast beef, two and one-half ounces.
Vegetables, two or three servings.	Spinach, three tablespoonfuls.
Fruit (without sugar), one serving (five ounces).	Stewed tomatoes, three tablespoonfuls.
Skim milk *or* buttermilk, one-half pint.	Artichoke, one medium.
	Mineral oil mayonnaise.
	Fresh pear, one large.
	Buttermilk, one glass.
Dinner	*Dinner*
Clear broth, tomato juice *or* vegetable soup.	Tomato juice, one glass.
Lean meat, fish *or* fowl, two and one-half ounces.	Boiled halibut, two and one-half ounces.
Vegetables, two or three servings.	Italian squash, three tablespoonfuls.
Fruit (without sugar), one serving (five ounces).	Cauliflower, three tablespoonfuls.
Skim milk *or* buttermilk, one-half pint.	Grapefruit sections, one grapefruit.
	Skim milk, one glass.

1200 CALORIE DIET (approximately 95 grams protein):

	SAMPLE MENU
Breakfast	*Breakfast*
Fruit juice (orange *or* grapefruit), one glass.	Grapefruit juice, one glass.
Fruit (without sugar), one serving (five ounces).	Apricot (fresh, dried *or* waterpacked), one large dish (five ounces).
Egg, one, *or* crisp bacon, three slices, *or* lean ham, one ounce.	Lean ham, one ounce.
Bread, one slice.	Toast, one slice.
Butter, one-half square.	Butter, one-half square.
Hot beverage (clear).	Coffee (clear).
Luncheon	*Luncheon*
Cottage cheese, three ounces, *or* lean meat, fish *or* fowl, three ounces.	Crab salad (crab, three ounces, lettuce, tomato, celery and cucumber).
Vegetables, two or three servings.	Mineral oil mayonnaise.
Fruit (without sugar), one serving (five ounces).	Raw apple.
Bread, one-half slice.	Crackers, two.
Butter, one-half square.	Butter, one-half square.
Skim milk *or* buttermilk, one-half pint.	Skim milk, one glass.
Dinner	*Dinner*
Clear broth, tomato juice *or* vegetable soup.	Vegetable soup.
Lean meat, fish *or* fowl, three ounces.	Boiled tongue, three ounces.
Vegetables, two or three servings.	Spinach, three tablespoonfuls.
Fruit (without sugar), one serving (five ounces).	Diced beets, three tablespoonfuls.
Bread, one-half slice.	Fresh celery, three stalks.
Butter, one-half square.	Sliced oranges, one large orange.
Swim milk *or* buttermilk, one-half pint.	Skim milk, one glass.

NOTE: Vegetables to be served without butter or cream.

Salads to be served with lemon, vinegar or mineral oil dressing.

Saccharine or saxin may be used for sweetening.

* * *

ENDOCRINE ASPECTS

H. LISSER, M. D. (Fitzhugh Building, San Francisco).—Endocrine obesity is a controversial subject. Everyone is agreed that there is such a thing as ductless gland adiposity; dissension concerns its frequency, its character, and the indications for glandular therapy.

Considerations of brevity permit but bold, blunt outlines crudely sketched; no time is left for argumentative or interpretative shading. In fairness, this must be borne in mind when appraising the terse statements which follow.

1. *Myxedema and milder forms of hypothyroidism* are usually accompanied by a moderate degree of obesity, some of which is "water-logging." Administration of thyroid substance to such individuals is indicated and perfectly safe when properly supervised. The weight reduction consists chiefly of fluid loss and dissipation of myxedematous deposits. Such patients are rarely more than fifty pounds overweight.

2. *Persons who are seventy-five or more than one hundred pounds overweight* have something else the matter with them, and usually we cannot find out what this is. A few of them are gluttons; most of them are not. Ordinary low caloric diets of 1,000 to 1,500 calories daily fail to reduce them much, if any. Severely subcaloric diets of the Evans type (300 to 600 calories) are necessary for adequate weight loss.

3. *The basal metabolic rate* in obese persons is not, by itself, an indication for or against the use of thyroid substance. It can be used safely and

effectually in patients whose basal rates are normal, and it can be futile or harmful in patients whose low basal rates are not due to hypothyroidism. In the last analysis the final test of a diagnosis of hypothyroidism is the response of the patient to thyroid administration. This is specific.[1]

4. Animated controversy continues concerning the merits, demerits, futility or danger of utilizing thyroid substance in the treatment of *non-thyroid obesity*. It is probably only fair to state that the most respected opinion denounces its use for this purpose. But the writer is quick to add, quite frankly, that he has employed this valuable adjunct to a proper reducing régime for over fifteen years in a truly large number of patients, and expects to continue doing so. Its dangers have been grossly exaggerated. Indeed, the propaganda of fear concerning it has been so widespread and intense that a large percentage of not only the laity, but also the medical profession itself, has become so frightened and panicky that much time is lost in trying to persuade patients, and especially their families and medical advisers, to give this preparation a trial. Most certainly, thyroid can do serious harm, when prescribed to the wrong person, for the wrong condition, or to excess. But so can digitalis, quinidin, insulin, salvarsan, massage, psycho-analysis or surgery, or any other truly potent therapeutic procedure. Only impotent measures are harmless. The purchase of thyroid substance, or preparations containing it, by the laity, without prescription, and without proper medical supervision, should be prohibited by law. But that any properly trained physician should be afraid of it is tantamount to admitting that he is not properly trained; for it is one of the easiest drugs to control, both by clinical observation and laboratory checks. Symptoms and signs of thyroid overdosage are by no means vague or elusive.

5. It has long been known that *castration* is usually followed by more or less obesity. Indeed, this is deliberately practiced in animal husbandry to prepare fatter, sweeter meat for market. Women ordinarily gain weight after the *menopause;* some do not; why, we do not know. It is reasonable to assume that *gonadal deficiency* in male and female may at times be associated with varying degrees of corpulence; but at present such endocrinopathies are difficult to diagnose with certainty. Moreover, treatment with corresponding glandular extracts, namely, the male or female sex hormones, does not reduce such adiposity specifically. Possibly there exist as yet undiscovered sex hormones which influence metabolism; comparable to the recently postulated metabolic hormone from the adenohypophysis. Or maybe the eunuch and eunuchoid becomes obese because of a secondary deficiency of some other ductless gland, as the thyroid, pituitary, or adrenal.

6. Although obesity is common in *diabetes mellitus,* and has been abundantly stressed as a potential precursor of insulary deficiency, diabetes is actually uncommon in the huge population of obese persons. Moreover, insulin has no reducing powers and, in fact, is utilized for fattening purposes in undernourished individuals.

7. *Adrenal cortical* tumors are relatively uncommon. The syndromes "genitosurrenale" caused by them, especially the pseudosexual-precocity of little girls and the virilism of adult females, are ordinarily associated with obesity, sometimes of immense proportions. It is conceivable that cortical hyperplasia without tumor can produce similar abnormalities. The fat is distributed in a manner resembling the obesity which characterizes Cushing's hyperpituitary basophilism, in the hips, buttocks, abdomen, breasts, thighs, and upper arms; the forearms and legs being singularly free from fat accumulation. Some investigators, notably Goldzieher, claim to have isolated a specific principle from the adrenal cortex which influences fat metabolism. He and associates[2] report the removal of one hyperplastic adrenal three times normal size from a 23-year-old woman who weighed 335 pounds, and who had failed to lose by thyroid and dietary measures. No dietary restrictions were utilized after the operation, and in one year thereafter she lost 145 pounds.

8. The numerous and highly significant investigations of the last twelve years concerning the functions of the *anterior and posterior hypophysis* have by no means settled the disputed relation of the pituitary body to fat metabolism. Camus and Roussy, in 1921, "showed that the adiposities with which pituitary ablation had been so often accompanied could be produced by slight injuries to the superficial gray of the tuber cinerum near the hypophysis, but with the hypophysis itself perfectly intact." This has been confirmed by others. So-called hypophyseal obesity had to be moved next door into the hypothalamus. But in 1931,[3] Anselmino and Hoffman reported the occurrence of a substance in the anterior lobe, separable from the growth, gonadotropic, thyrotropic and lactogenic hormones, which causes a rise of the acetone bodies in the blood. It occurs in the blood stream, and has been isolated from the urine. It appears in the blood only when fat is burned.

This discovery, together with the recently postulated syndrome by Cushing of pituitary basophilism in which a rapidly acquired, peculiarly distributed plethoric and sometimes painful obesity is a highly characteristic phenomena, suggests that a pituitary responsibility for certain forms of obesity merits further consideration.

Meanwhile, the majority of clinicians who have attempted to influence weight reduction by the oral or hypodermic administration of anterior, pituitary or "whole" pituitary products, consider such therapy useless. A few hold otherwise, but have not provided acceptable proof of their contentions. No doubt this will be settled eventually.

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1 Lisser, H.: The Clinical Indications for, and the Proper Use of Thyroid Substance, International Clinics (Dec.), 1933.

2 Koster, Goldzieher, Collens, and Victor: Am. J. Surg., 13:311, 1931.

3 Anselmino, K. J. and Hoffman, F.: Klin. Wchnschr. 10:2380, 1931.

California and Western Medicine

Official Organ of the California and Nevada Medical Associations

Owned and Published by the

CALIFORNIA MEDICAL ASSOCIATION

FOUR FIFTY SUTTER, ROOM 2004, SAN FRANCISCO

Telephone Douglas 0062

Address editorial communications to Dr. George H. Kress as per above address; advertising and business communications to the Secretary-Treasurer, Dr. Frederick C. Warnshuis, also at the above address.

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Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

BUSINESS MANAGER . FREDERICK C. WARNSHUIS

Advertising Representative for Northern California
L. J. FLYNN, 544 Market Street, San Francisco (DO 0577)

Advertising Representative for Southern California
A. GUTTMAN, 1925 Wilshire Blvd., Los Angeles (VA 1221)

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Subscription prices, $5.00 ($6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication.—California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS*

THE NEW HOME AND LIBRARY BUILDINGS OF THE LOS ANGELES COUNTY MEDICAL ASSOCIATION

A Dream That Has Been Realized.—To be known as one of the larger component county medical societies of the United States, is a simple honor, but to possess at the same time one of the most attractive and efficient headquarters in home and library buildings to be found anywhere in the entire country, is a still more desirable and an even greater achievement.

On October 25, 1934, the new headquarters and library buildings of the Los Angeles County Medical Association were formally opened; and on pages 376 and 379 of this issue of CALIFORNIA AND WESTERN MEDICINE will be found illustrated articles concerning both of the ornate buildings.

The Council of the California Medical Association, on November 10, met in the new headquarters and passed formal resolutions on behalf of the Association's members, congratulating the Los Angeles County Medical Association on its unique good fortune. The buildings have been open only little more than a month; but their increasing use, day by day, by more and more members, has already raised the question of ampler accommodations to meet the growing activities of the society.

Too much praise cannot be given to the officers of the Association, whose influence in securing a wise investment of funds in real estate of rapidly increasing value provided the capital resources by which it was possible both to erect the structures, and to provide for their maintenance.

Members of the California and American Medical Associations who have occasion to come to Los Angeles are cordially invited to visit these architectural units, and to avail themselves of their varied facilities. The buildings, as splendid expressions of achievement, showing what organized medicine can attain in the domain of material accomplishment, have an inspirational value to physicians, which should be as great or greater than that to be found through hours spent in many old and new world museums and galleries.

With headquarters and a library such as are described and portrayed in this issue, the Los Angeles County Medical Association may be said to be only on the threshold of its real work and expanding career. Its example should stimulate the members of other component societies to be equally alert concerning their own present and future needs.

INITIATIVE 9 (CHIROPRACTIC) AND INITIATIVE 17 (NATUROPATHIC) DECISIVELY REJECTED

It is a matter of regrettable import that in the United States physicians, as a class, ordinarily evince only a moderate interest in civic affairs and political movements; but this year, owing to special conditions, members of the medical profession in California were led to take an active part in the recent political campaign, and join lay citizens who, by their ballots, decided a number of important questions. The issues which brought about this healthier participation by the members of the medical profession were two measures (Chiropractic Initiative 9 and Naturopathic Initiative 17), which it was proposed to enact into law by direct vote of the people.

For a discussion of the nature and scope of these movements, see comments in recent issues of this JOURNAL (October, pages 269 and 285, and November, page 338).

* * *

How Initiatives 9 and 17 Fared in the November Election.—The complete and final returns of the November 6 election will not be given out from Sacramento until December 15, but figures from the daily press, published shortly after the election, will answer our present needs.

Thus, on November 9, out of a total of 10,721 precincts in California, the vote of 9,357 precincts on Initiative 9 (Chiropractic) was 598,390 yes, and 961,863 no, a difference in favor of rejection of the proposed chiropractic law of 363,473 ballots.

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

On Initiative 17 (Naturopathic) from a total of 8,354 precincts, the vote stood 408,884 yes, and 889,849 no, a difference in favor of rejection of the proposed naturopathic law (with 1,003 fewer precincts counted at the time) of 479,965 ballots.

In the year 1922, the osteopathic and chiropractic initiatives were passed with substantial majorities by initiative vote of the people. The figures of this year, therefore, would seem to indicate a much better understanding of the principles involved as regards the relation of sectarian healing art propaganda to real public health standards.

In the year 1922 the heavy vote in favor of the osteopathic and chiropractic initiatives came from Southern California. The November 8 returns from Los Angeles County, this year, were as follows: On Initiative 9 (Chiropractic), for 3,321 precincts out of 3,574, the vote was 284,351 yes, and 415, 815 no, or a rejection majority of 131,564; while for Initiative 17 (Naturopathic), for 3,444 precincts out of 3,574, the vote was 209,193 yes, and 422,524 no, or a rejection majority of 213,331. We regret that it is not possible to give more exact figures for other counties, but those above obtainable are sufficient to show how alert the citizenry were in respect to the significance of these issues.

In Los Angeles County, the total approximate vote, according to the figures of November 8, of all the candidates for governor (3,559 precincts out of 3,574) was 931,372, while the total vote for Initiative 9 (Chiropractic) was 700,166 and for Initiative 17 (Naturopathic) was 731,717. These last statistics for Los Angeles County are illuminating, because the vote on initiative propositions this year was much larger in proportion to the gubernatorial vote than has usually been the case.

It is to be regretted that it is possible only to guess at the motivating influences which led citizens to vote "yes" or "no" on the initiatives under discussion. It may be that many who voted in favor (without understanding the scope of the measures) thought they were only giving a minority group an even chance, forgetting all about the element of low professional standards at which the opposition was primarily directed. Be that as it may, this year's conflict at the polls was most reassuring to the medical profession, because it demonstrated that organized and scientific medicine has little to fear from sectarian propaganda, if proper measures are taken to educate citizens concerning the real issues involved.

* * *

Splendid Coöperation Made the Victory Possible.—We have not the space to comment on all the forces that made possible a victory redounding much to the credit of the California Medical Association, whose members, through their component county societies, and also in many instances working in enthusiastic coöperation with chapters of the California Public Health League, were largely responsible for the very satisfying results obtained. In some counties, members sent out hundreds of personal letters. The radio programs, too, no doubt had a valuable educational influence. Here and there, endorsements by Chambers of Commerce and similar bodies were secured. The League for the Preservation of Professional Rights circularized all the newspapers of the State. Hospitals, through their staff funds, supplied their members with post-cards to be sent to patients, and the California Medical Association sent fifty post-card forms to each of its members.

* * *

The Value of the Appeal Through Personal Letter and Card.—If we were to emphasize any one element in the publicity and contact work, it would be the value of the personal letter, when possible, or at least the signed post-card, for in the last analysis, what is wanted in an election is real contact with voters. The members of the California Medical Association have, as their patients, a majority of the citizens of California. These citizens believe in doctors of medicine, or they would not be their patients. The personal relation and confidence which exist between a physician and patient is not a transient or temporary thing, but is often a friendship based on years of friendly intercourse and understanding. In an election, such a patient-friend needs only be made acquainted with the nature of the basic issues at stake, to have him gladly accede to the request to consider his physician's viewpoint when he casts his own ballot.

* * *

The Attitude of Scientific Medicine.—We have been told that, since the election, one of the defeated cultist groups has held meetings, at which it was stated that two years hence, on the basis of their experience of the year just past, they would again go before the people. If so, we predict that, if they present similar propositions, they will go down to more disastrous and decisive defeat than in this year 1934.

Scientific medicine asks no special favors from the State, but it does insist that the State shall protect its lay citizens by demanding that all who practice the healing art shall have had adequate preliminary and professional training, in order to make them safe persons to whom citizens afflicted with disease or injury, may turn for skilled aid. We believe that when this principle is properly understood, about all citizens will hold similar views. Herein lies the strength of the position of the medical profession. The only other element needed, for successful results, is a knowledge of political procedure, whereby the thousands of citizens, who are patients, shall in easiest and most practical form be made to understand any public health measures under consideration, and the reasons why their personal physicians advocate acceptance or rejection.

It is gratifying to know that also the sectarian groups in Arizona and Oregon,* as well as in California, went down to defeat in the November elections. May it ever be so!

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* See page 430 of this issue for comment thereon.

Need of a Qualifying Certificate (Basic Science) Act.—In concluding these comments, a few words on the program of the future may be in order. The citizens of California should not be called upon, every two to four years, to vote upon specious propositions such as the defeated Initiatives 9 and 17. Nor is it fair that the members of the medical profession should be obliged recurrently to give political battle to sectarian groups who would destroy decent standards of professional attainment. What then can be proposed to prevent such experiences? Our answer is that a practical remedy is to be found in a qualifying certificate (basic science) law. In the November issue of CALIFORNIA AND WESTERN MEDICINE (page 339) some of the provisions of such a law, as accepted in a draft submitted to the Council of the California Medical Association by its special committee, were outlined. If you failed to read those comments, we suggest that you make a memorandum and refer to them. Any suggestions you may have thereon can be sent to the Association secretary, who will transmit them to the chairman of the special committee.

Whatever hesitancy may have existed in the past, concerning the advisability of placing a qualifying certificate (basic science) law on the State election ballot, has been dissipated by the recent election. It may, therefore, be stated that our immediate work is not so much to arrange for battle with sectarian practitioners at the next election, as it is to carry on a campaign of education so that the citizens of California will be prepared to enact by initiative vote, not later than 1936, a qualifying certificate law.

THE NEW CALIFORNIA LEGISLATURE

The Fifty-First Session Will Convene in January, 1935.—The January issue of CALIFORNIA AND WESTERN MEDICINE will be placed in the mails on January 10, but the fifty-fifth session of the legislature will begin some days before, on January 2, the legislature meeting throughout that month, and then going into a constitutional recess of one month (during February), to reconvene and be in session through March and April, and probably into May. Its rules of procedure provide that bills may be introduced throughout the month of January, but that after the February recess no bills may be introduced except by special consent.

It is possible that during the month of January a total of almost one thousand proposed laws having a bearing on public health and medical matters may be introduced. Each of these will necessitate careful reading and study. As a matter of fact, to properly safeguard the public health almost every bill must be perused to determine whether paragraphs having to do with public health interests are contained therein. At the coming session the task which confronts the California Medical Association's Committee on Public Policy and Legislation promises, in these unsettled times, to be greater and more onerous than ever. On that account, it is hoped that component county societies, through their members and officers, will strive to give to the committee, of which Dr. Junius B. Harris* of Sacramento is chairman, as prompt and efficient aid as may be possible.

* * *

Cordial Affiliations Should Be Established with State Assemblymen and Senators.—The November 6 election settled the question as to who should be State Assemblymen and Senators. Before these fellow citizens go as members-elect to Sacramento, the most cordial personal contacts should be made by the many members of the California Medical Association. State Assemblymen and State Senators are responsive to the viewpoints of their constituents, and it is a distinct advantage to the interests of the public health, and of organized and scientific medicine, if such Assemblymen and Senators have pleasant personal relations among the medical profession. Our representatives will be in their home communities during the month of December, and that would be a convenient time in which to renew or to make friendly affiliations.† Once the legislators are in Sacramento, the rush and turmoil of the political environment will not be so conducive to a good mutual understanding. All officers and members of component county societies, therefore, should avail themselves of the opportunities which still exist during the coming month of December, to create and make stronger their personal and friendly contacts with those who, as legislators, will be required to pass upon a multitude of public health measures.

THE MEDICAL-ECONOMICS SURVEY OF THE CALIFORNIA MEDICAL ASSOCIATION—IMPORTANCE OF COÖPERATION

Questionnaire of the Committee of Five.—Reasons why it is necessary that all members of the California Medical Association should coöperate with the California Medical Association Committee of Five by sending in their filled-out confidential and impersonal questionnaire blanks as promptly as possible were given in the November issue of CALIFORNIA AND WESTERN MEDICINE (pages 338 and 344). The attention of all members who have not so forwarded their replies is again called to the requests therein made, in the hope that their perusal will lead to an early response with the medical-economic information that is so much needed if the survey, which our Association has started, is to be of real value. The office headquarters of the administrative staff of the California Medical Association Survey is located at 9623 Brighton Way, Beverly Hills, California, and to this address all communications should be mailed.

Officers of county societies are urged to bring this matter to the attention of their members at every society meeting, and members themselves are asked to mention the subject to one another, because such comment and discussion are more apt

* Editor's Note.—At the time these page proofs are being read, Doctor Harris is reported most seriously ill in the Sutter Hospital in Sacramento. His colleagues extend their sincerest wishes for a prompt and complete recovery.

† For roster of Fifty-first California Legislature, see page 431.

to lead tardy or indifferent members to fulfill their plain responsibilities in this work. For the information of any who have permitted themselves to think that this survey by the Committee of Five is of little consequence, it may be pertinent to add that some thousands of dollars have already been drawn from the treasury of the California Medical Association, in order to properly inaugurate and carry through this work. Therefore, if the results desired are to be realized, almost eighty per cent, or four thousand California Medical Association members, must still send in their replies to Professors Dodds and Watkins, who are supervising the investigation for the Committee of Five. Moreover, the answered questionnaires must be received as soon as possible, if the compilation of facts is to be completed in time for presentation at the session of the next California Legislature, which will begin on January 2, 1935, and at which session, and prior to February 1, all new reports and proposed legislation are supposed to be submitted.

So once again, on behalf of the Committee of Five (which your delegates, on your behalf, brought into existence at the 1934 Annual Session), an urgent appeal is made that in the event of your not yet having done so, you will fill in your questionnaires, and send them at once to the committee.

For those who have mailed in their replies, the thanks of the Association; with the request, however, that they continue their good work by constituting themselves special committees to check on their personal friends in the profession, and to urge all who have been laggard to give the survey their prompt attention. If we fail in this now, there may later be cause for much regret. If, on the contrary, each member does his part, then individually and collectively, we shall have reason to be satisfied and proud.

* * *

The Field Survey by the Federal Government, Under the Auspices of the California State Board of Health.—While on the subject of the California Medical Association Survey, it may be permissible to state that it is gratifying to the members of the California Medical Association to know that the sickness-survey which is being made in California is not to be confined to facts and figures secured only from members of the medical profession, but that, in addition, a field survey of lay citizens has been undertaken. This investigation by field workers, which will cover some twenty-five counties, and be of sufficient scope to be a fair cross-section of the varied environments of our large State, is being carried on through federal aid, secured by the California State Board of Health and conducted in its name. The information so secured by the field workers from lay citizens, when used in connection with that now in process of collection by the California Medical Association from its own five thousand members, should be of great value, not only to the State of California at large, but to other commonwealths of the Union.

CHANGE IN ADMISSION REQUIREMENTS AT THE "LOS ANGELES COUNTY GENERAL HOSPITAL"

The Medical and Osteopathic Units of the Los Angeles General Hospital.—Many members of the California Medical Association are directly or indirectly interested in County Hospital activities, and most of these are aware of the fact that, some years ago, in Los Angeles, the Board of Supervisors instituted a new unit, staffed by doctors of osteopathy. The problem thereupon immediately arose concerning the rule of procedure to be followed in admitting patients to the old medical and the new osteopathic units. Because the County of Los Angeles had spent some $600,000 in remodeling one of the hospital buildings for osteopathic use, and because the entire hospital at that time was much overcrowded, the Supervisors in 1928 insisted that the new bed capacity so provided should be promptly used and kept filled. Thus it was that the empirical and troublous rule that every tenth patient applying for admission should be sent to the osteopathic unit was promulgated by the then superintendent, Dr. Neal N. Wood. In the ensuing years this rule never ceased to be a source of irritation, and its existence may be said to have been one of the reasons why the American College of Surgeons refused to include the hospital on its approved list. Fortunately, however, the Council on Medical Education and Hospitals of the American Medical Association did place the hospital on its accredited list, so that interne service, secured from California and Eastern medical schools and including some 125 internes, in constant residence, was not seriously interfered with.

* * *

New Names for the Medical and Osteopathic Units.—Another point of misunderstanding leading to confusion had to do with the names of the medical and osteopathic units, the numerical system of Unit One and Unit Three being used to designate the two hospitals. The Medical Board of the Attending Staff of the Medical Unit, year after year, made earnest efforts to bring about a change in the nomenclature of the two institutions, and a few months ago the County Board of Supervisors were successfully petitioned to rename the two hospitals. The Supervisors continued the title "Los Angeles County General Hospital" as the designation for all its county hospital activities, calling the medical unit "The Los Angeles County Hospital" (the old term, for many years, of the original county hospital) and applying the name "Los Angeles County Osteopathic Hospital" to the osteopathic unit.

* * *

The "One-in-Ten" Admission Rule Abolished on November 1, 1934.—Subsequent to this, and again after discussion and by mutual consent, it was possible for Superintendents Martin and Olsen to issue Bulletin 1498, under date of October 25, 1934, addressed "To All Physicians and Surgeons and Public Generally in Los Angeles

County," and explaining the new rules and procedures regarding admission of patients. From it we quote the following paragraphs:

Los Angeles County General Hospital Made Up of Two Hospitals.—By a recent action of the Board of Supervisors it was ordered that while this institution as a whole should be known as "Los Angeles County *General* Hospital" for purposes of financial administration, those portions of it in which patients are treated by physicians and surgeons who are doctors of medicine (M. D.'s) should be known for public and professional purposes as "Los Angeles County Hospital" and those portions in which patients are treated by physicians and surgeons who are doctors of osteopathy (D. O.'s) should be known for public and professional purposes as "Los Angeles County Osteopathic Hospital."

The intent of this action was to indicate more clearly to the public the distinction in name between the two types of medical and surgical treatment offered to patients at these two county institutions and to let the public make its own choice between these two types rather than assign applicants arbitrarily by the numerical ratio of one in ten as heretofore, a ratio based upon the relative bed capacity of the Osteopathic Hospital as compared with the Medical Hospital before the opening of the new acute unit. The staffs of physicians and surgeons of both hospitals acquiesce in the abolition of the old rule, feeling that the public should have a free choice. The hospital administration favors the change because it simplifies admitting procedure and saves a large number of transfers of patients after admission, thus contributing to economical operation, a very important item in times like the present.

Persons Wishing to Be Admitted Should Indicate Their Choice.—The new plan of "free choice" will go into effect November 1, 1934. On and after that date all persons and agencies having anything to do with referral of patients to the Los Angeles County *General* Hospital are requested to obtain from the patient a statement of choice as between the Los Angeles County Hospital (staff made up of M. D.'s) and the Los Angeles County Osteopathic Hospital (staff made up of D. O.'s) and to indicate this choice when notifying the hospital regarding patients; also to instruct patients who are to make personal application to the hospital that they should make their choice before applying, and thus save much time and many steps by going direct to the hospital of their choice. . . .

Explanation of Staffs to Prospective Patients.—In explaining to applicants for admission that there are two hospitals with two types of doctors between which a choice must be made, the following language is advised:

"The professional staffs of the Los Angeles County General Hospital are composed of two types of doctors:

"(*a*) Physicians and surgeons who are doctors of medicine (M. D.'s) working in the 'Los Angeles County Hospital,' and

"(*b*) Physicians and surgeons who are doctors of osteopathy (D. O.'s) working in the 'Los Angeles County Osteopathic Hospital.'

"Applicants who are eligible for care at county expense may be admitted to either of the two hospitals, but should state their choice before admission and go or be taken direct to the admitting department of the hospital of their choice."

Your assistance in disseminating this information to all concerned will be appreciated.

The Medical Board of the Attending Staff of the Los Angeles County Hospital may feel proud of the service it has rendered in a matter of such very near interest to the two thousand members of the Los Angeles County Medical Association, of general concern to the other members of the California Medical Association and of no little importance to the public at large; and because many members of the California Medical Association have long been watching the course of events, space is here given to the new rules.

REPRINTS OF ARTICLES ON ANIMAL EXPERIMENTATION

The Ivy and Rowell Articles to Be Reprinted.—The October number of CALIFORNIA AND WESTERN MEDICINE called attention (on page 272) to an excellent presentation of facts concerning animal experimentation, as portrayed in the Northwestern University exhibit at the Chicago Century of Progress Fair. The text of Professor A. C. Ivy's article on "Some Contributions on Animals to Human Health" was printed on page 247 of the same issue. Most members of the medical profession are familiar with many of the facts brought out in Doctor Ivy's exhibit; but, on the other hand, comparatively few of us had grouped that information in anything like the admirable set-up arranged by him and his faculty-colleagues of Northwestern University. The November issue of CALIFORNIA AND WESTERN MEDICINE (page 325) printed what might be styled a complementary or follow-up article, in the form of an address by Doctor Ivy, having the title "Seven Wonders of Medical Science—Modern Miracles." Readers of this JOURNAL are urged to peruse both articles, because they give complete and sane answers to the misstatements of antivivisectionists.

At its last meeting, held in Los Angeles on November 10, the Council of the California Medical Association authorized the publication of a reprint leaflet that would contain the two addresses by Doctor Ivy and also the article on "Antivivisection" by Chester Rowell, LL. D., first appearing on page 352 of the May, 1933, issue of CALIFORNIA AND WESTERN MEDICINE. Members of the California Medical Association, and of its Woman's Auxiliary, who desire copies of these reprints, should send in their requests to the Association Secretary.

EDITORIAL COMMENT*

DRUGS AND DEAFNESS

The pathways along which the art of healing has evolved are strewn with the milestones of empirical methods, leaving often behind stigmata as serious as, if not more so than, the diseases they were intended to cure. Our progress has been amazing, research has been indefatigable, but there are some fields which as yet have received far too little attention. Clinicians of the various specialties are justifiably interested mainly in curing or ameliorating the condition for which their advice is being sought. Other concomitant effects of their

* This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

treatment, often deemed temporary or harmless, are apt to interest them but little.

The statistics of otologists, and of various national and other surveys, give evidence in our population of the widespread incidence of hearing impairment, which has been estimated to be as high as 17,000,000. The testing of the hearing of some 800,000 school children has given indication of the tremendous amount of unnoticed but incipient deafness not only in these children, but which undoubtedly exists in the preschool child as well as in adults. The American Federation of Organizations for the Hard of Hearing—a national association composed chiefly of members of the various Leagues for the Hard of Hearing throughout the country—by its constant propaganda for prevention, and for a better understanding by the public (which includes physicians) of the general problems of deafness, has brought this situation home to many of us.

The otologists and geneticists have shown the indisputable fact of hereditary predisposition and congenital deafness. The opinion now prevails that the eighth nerve of a child which may have inherited constitutional factors predisposing to deafness is far more susceptible to the effects of colds and bacterial toxins than one with no hereditary taint. Any individual with a previously damaged eighth nerve, or with one which, because of hereditary factors, tends to early atrophy, comes within the same category as to the effects of certain drugs currently used in general practice, and perhaps occasionally by some otologists.

The action on the vegetative nerve of the older drugs has been pretty thoroughly studied. Certain of them have been purified, and others whose action is practically identical, though less toxic, have been synthesized; but as a matter of fact the paucity of our knowledge of their effect on the eighth nerve is startling. A fool may be born every minute, but if the present rate for drugs continues they will soon beat that record.

The studies which have been undertaken along the lines indicated are almost negligible and, moreover, they have been made, for the most part, upon normally-hearing man and animals.

The great hope in solving the many problems concerning the absorption of drugs in the auditory region resides in our newer knowledge of the transmission of nervous impulses (Loewi [1]) of vestibular function (Tait [2]) and that obtained by the brilliant researches of de Nó [3] in his neuroanatomic and neurophysiologic investigations of the ear. Furthermore, otologists, physiologists, physicists, and psychologists have given us three new methods for testing the hearing of animals, and thus have greatly stimulated otological research.

Medical literature is replete with clinical investigations in which various drugs, many of them new, are being used. These range from analgesics, hypnotics and anesthetics—local and general—to antipyretics and antispasmodics. Most of these are alkaloids and salicylates or their derivatives; morphin [4] and aspirin for colds, quinin [5] in large doses for the induction of labor, and even as lotions [6] to prevent sunburn. It is not evident that thought, to any extent, has been taken by physicians of the possible cumulative and permanent effect that many of these drugs, administered by the usual route and in the customary dosages, may have upon the auditory nerve of a deafened individual. He might be likened to the normal man whom six cocktails would not visibly affect, but who would "pass out" with two more. The man with the damaged nerve is perhaps often already affected to the point where a minimal dosage of certain drugs would cause further irreparable damage to his hearing. We cannot do much for a hereditary predisposition to disease, but we can, to a considerable extent, control or combat the environmental factors which initiate its progress.

When a drug is being administered to a deafened patient, he may ask if it will increase his deafness. The physician, thinking too often in terms of the transitory effect of quinin on the normally-hearing individual, is apt to say "No," or "It is not at all likely."

Research, according to the most modern methods, is now being initiated in the East and in California (Coleman Fund, University of California); and exact, or at least the probable effect, cumulative or otherwise, on the eighth nerve of man of many of the drugs now commonly used, especially the salicylates and alkaloids, will be discovered. Given the well-known incidence of deafness, until further information becomes available, a plea is made that clinicians at large become more deafness-minded in the use of such drugs.

It is hoped that legal measures may be taken to decrease the indiscriminate use by the public of such drugs as aspirin without a physician's prescription, and that the latter, when filled, will be taken up by the pharmacist.

Hooper Foundation.

George E. Coleman,
San Francisco.

1 Loewi, Otto: The Harvey Lectures, pp. 218-233, 1932-1933. The Williams Wilkins Company.

2 Tait, John: Trans. Am. Otol. Soc., pp. 146-177, 1932.

3 de Nó, Rafael Lorente: Laryngoscope, 43:1-38, 1933.

4 Diehl, Harold S.: J. A. M. A., Vol. 101, No. 26, pp. 2042-2049 (Dec.), 1933.

5 King, E. L.: J. A. M. A., Vol. 101, No. 15, pp. 1145-1148, 1933.

6 Am. Jour. Pharm. (Jan.), 1934.

INTERPHASIC BACTERIAL ANTAGONISM

One of the newest discoveries of bacteriology is the well-confirmed fact that different phases of the same bacterial species are mutually inhibitory. Only one dominant phase, or type, may multiply in a mixed culture or mixed infection of different strains of the same bacterial species; the minor types or phasic variants being suppressed, transformed or autolysed by the interphasic biochemical incompatibility. This discovery has an important bearing on numerous clinical diagnostic methods, many of which are based on the assumed perfect compatibility of all phases and types of the same specific infectious agent.

Test-tube incompatibility of different bacterial species has, of course, long been known, with recognition of a similar incompatibility in mixed

infections. An experimental anthrax infection of laboratory animals, for example, can be "inhibited" by the previous or subsequent inoculation with pyocyaneous. The enzymes extracted from certain putrefactive bacteria will protect mice against multilethal doses of pneumococci. Experimental diphtheria "carriers" can be cured by local inoculation with certain non-pathogenic cocci.

A definite hint of growth incompatibility between different types of the same species was reported about two years ago by Doctor Etinger-Tulczynska[1] of the Robert Koch Institute, Berlin. He found that mice inoculated with a mixed type of pneumococcus suspension almost invariably yielded but one type of pneumococcus at autopsy. In one series of eighty-four inoculations with Type I plus Type II, for example, a pure culture of but one type was recovered from sixty-two mice, a mixed infection being demonstrable in but six mice. The Berlin clinician then inoculated nutrient broth with various arbitrary mixtures of the same pneumococcus types. He found that tubes inoculated with certain relative proportions of two types almost invariably killed off, suppressed (or transformed) the less numerous type. The relative proportion necessary for complete type suppression varied from a 1000:1 ratio with one mixture to a ratio of 1,000,000:1, depending upon the strains selected. In a detailed analysis of this alien-type suppression, Grundel and Mayer[2] found that the cultural incompatibility was not linked with relative growth-rate or virulence, but was apparently due to an unknown "Factor X," for which they invented the noncommittal term "Konkurrenzfähigkeit."

Neufeld and Kahn[3] currently report a similar incompatibility or lack of "Konkurrenzfähigkeit" between the R and S variants of the same pneumococcus type, a test-tube incompatibility also demonstrable by animal inoculation. A similar growth incompatibility was found between different diphtheria strains. The "type-stabilizing" hormone was demonstrable in the apparently sterile supernatant fluid from centrifuged cultures, but was apparently lost as a result of attempted passage through a Berkefeld filter.

Stanford University.

W. H. Manwaring,
Palo Alto.

THE PHYSICIAN AS A BUSINESS MAN

When one contemplates the physician as a business man, the picture is often far from appealing. The few physicians who stand out as examples of business success are notable for their rarity. The rank and file seem to be floundering in a veritable slough of despond.

Statistics disclose that only the exceptional physician is sufficiently provident to lay aside savings adequate for his declining years, even when his earnings permit; or, in case he does thus look ahead, to hold them against the onslaughts of the economic racketeer. Probably not more than 10 per cent of the physicians who have been wholly dependent on their practice reach the age of three score years and ten in other than a sorry financial plight. Serene old age proves largely a pipe-dream to the other 90 per cent.

In the face of a condition, therefore, like that of the past four years, with its attendant evils of buyers' strikes, diminished collections, and the encroachment of sundry bizarre schemes to bewilder both the physician and the populace, the situation becomes critical in the extreme. Today, it is no exaggeration to say that fully 50 per cent of the members of the profession are in genuine distress.

To say what should next be said, is quite certain to prove unwelcome. But truth is truth, even though distasteful. The issue is between professional ethics and traditions on the one hand, and self-preservation on the other. The root of the trouble is not so much the business incompetence of the individual physician, as his lethargy and disinclination to interfere with the established order of things.

In the meanwhile, he has only to look about him to realize that an increasing number, disregarding ethics and tradition, are receiving the support that should be his by buying and paying for effective publicity.

Again, he sees (without, however, perceiving) the inroads being made upon the practice of medicine, in ever increasing number and variety, by lay profiteers and misguided politicians; and too often takes this lying down.

If the physician were not so confirmed an individualist, he would have recognized long since that the only way to overcome the evils surrounding him is by adopting the necessary business ideas and policies. In this he cannot act alone and maintain his self-respect; but through organizations already existing, or others to be formed for the particular purpose, he can assert himself and protect his future if he has the courage to quit the bench and go to bat.

The truth is that the time has fully come when the medical profession can no longer afford to remain passive, to drift along in careless fashion toward the reefs to be discerned so plainly just ahead. Already state medicine looms on the near horizon. The immediate future holds definite menace. Less compensation and greater responsibility under political bureaus controlled by laymen, loss of both dignity and independence, imposition, humiliation, financial and social ignominy—these are some of the dangers which seem to be lurking around the next corner. The times have changed; too many physicians creak along in the same old rut. To continue a course of apathetic indifference is simply to invite disaster.

The readjustment here hinted at may not be attractive, but it appears the only hopeful alternative. The issue is very clear: Does the physician prefer meekly to submit, or to see and heed the warning signals displayed on every hand?

947 West Eighth Street.

A. B. Cooke,
Los Angeles.

1 Etinger-Tulczynska, R.: Zeit. Hyg., 113:762, 1932.
2 Grundel, M., and Mayer, U.: Zentralbl. f. Bact., 129:20, 1933.
3 Neufeld, F., and Kuhn, H., Zeit. Hyg., 116:95, 1934.

CALIFORNIA MEDICAL ASSOCIATION

FREDERICK C. WARNSHUIS, M. D., Associate Editor for California

This department contains official notices, reports of county society proceedings and other information having to do with the State Association and its component county societies. The copy for the department is edited by the State Association Secretary, to whom communications for this department should be sent. Rosters of State Association officers and committees and of component county societies and affiliated organizations, are printed in the front advertising section (Adv. pages 2, 4 and 6).

CALIFORNIA MEDICAL ASSOCIATION

CLARENCE G. TOLAND.....President
ROBERT A. PEERS.....President-Elect
FREDERICK C. WARNSHUIS.....
Secretary-Treasurer and Associate Editor for California

SEASON'S GREETINGS

Sincere and cordial good wishes for a joyous holiday season are extended to every member by the entire personnel of the headquarters staff and secretary. May this holiday season bring to you and yours unalloyed happiness and good checr.

MONTH'S ACTIVITIES AND COMMENTS

The Committee of Five will present a preliminary report in December. The action of the State Board of Health in securing $50,000 for survey expenses removed this drain upon the Association's reserve funds.

The Ivy exhibit on "What Animals have Contributed to Human Health" has been secured by the State Association and will be exhibited in Sacramento during the session of the legislature.

Scientific Exhibits, Annual Session.—Members desiring to present scientific exhibits at the 1935 annual session in Yosemite National Park will please write to the State Secretary for assignment of space.

The following telegram was received:

Chicago, 12:47 p. m., Nov. 7, 1934.

Secretary, California Medical Association,
San Francisco.

Heartiest congratulations to California Medical Association for splendid results secured through its magnificent efforts. Olin West.

Committee of Five.—This committee will make a preliminary report to the Council early in December.

Special Meeting of the House of Delegates.—The Council has directed that a special meeting of the House of Delegates be called before January 15. The purpose of this meeting is to receive the report of the Committee of Five and to determine the Association's policy in regard to legislation related to medical care and economic security. The date for the special meeting will be determined at the December Council meeting. The official call and notice will be sent to the delegates who were seated during the last annual session and to county societies.

Conference of County Secretaries.—The Council approved the following recommendation:

Resolved, That an annual conference of county society secretaries be held and that the traveling expenses of secretaries and the cost of a dinner be paid by the Association.

This conference will be arranged and notification sent to each county secretary. Secretaries are requested to plan attendance.

Pocket Membership Cards.—By direction of the Council the issuance of pocket membership cards will be discontinued. In their stead each member, upon payment of his annual dues, will receive from the State Association a membership certificate, 7 x 9, suitable for framing. The purpose of this innovation is threefold: Hung upon the reception-room wall, it will convey to the member's clientele his organizational affiliation. Second, it will serve to acquaint the public with the existence of the county and state organizations. Third, it may induce the eligible non-member to affiliate lest his clientele inquire why he is not a member as is Doctor Blank. Members are requested to display their certificates upon receipt. This may be expedited by the prompt payment of dues.

The following conference was held November 22 and 23:

Council Meeting.—An adjourned meeting was held in Los Angeles November 10. On November 11 the State Secretary met with the Riverside County Society, and on November 12 President Toland, Councilors Roblee, Pallette, Wilson, and the State Secretary met with the San Bernardino County Society.

Legislation.—The Council approved the drafting of bills to provide for a qualification certificate and also to provide against unethical advertising. Further information will be imparted at a later date.

Economic Security Committee.—Members should read the editorials and comments in the *Journal of the American Medical Association* upon the program and activities of President Roosevelt's Committee on Economic Security.

OFFICIAL NOTICE

Proposed Amendments to the Constitution

(Second Publication)

ARTICLE XIII, SECTION 2

Amend Article XIII by adding a new section to be numbered Section 2, reading as follows:

"Section 2. To further aid in carrying out the objects of the Association, the House of Delegates at any meeting at any regular or special session thereof may, by a two-thirds vote of the membership thereof present and acting, authorize, empower and direct the Council to cause the formation and organization of one or more corporations under the laws of the State of California with such incorporators, name, purposes, county where the principal office for the transaction of business is to be located, first directors, the total number of shares, the aggregate par value, if any, of all shares, classes of shares, par value of any shares having par value, statement of the provisions, privileges and restrictions granted or imposed upon the respective classes of shares, or if the corporation be formed without capital stock, the authorized number and qualifications of its voting and other rights of each class of members and the liability of each and all classes, to dues or assessments, and with such further provisions in the articles of incorporation thereof and with such by-laws as the Council shall prescribe, fix and determine; and the House of Delegates at any meeting of any regular or special session thereof may by a vote of two-thirds of the members thereof present

and acting, authorize, empower and direct the Council to grant, assign, transfer, convey or deliver or cause to be granted, assigned, transferred, conveyed or delivered to any of such corporations upon the formation thereof or to applicants for health and accident or other insurance in or from any of said corporations at or prior to the formation thereof without any consideration therefor, such funds and property, real or personal, of this Association as the House of Delegates shall from time to time authorize or ratify."

Article XIV, Section 1

Amend By-Laws by adding thereto a new chapter to be numbered XIV, Section 1, reading as follows:

"Corporations. To further aid in carrying out the objects of the Association, the House of Delegates at any meeting at any regular or special session thereof, may by a two-thirds vote of the membership thereof present and acting, authorize, empower and direct the Council to cause the formation and organization of one or more corporations under the laws of the State of California with such incorporators, name, purposes, county where the principal office for the transaction of business is to be located, first directors, the total number of shares, the aggregate par value, if any, of all shares, classes of shares, par value of any shares having par value, statement of the provisions, privileges and restrictions granted or imposed upon the respective classes of shares, or if the corporation be formed without capital stock, the authorized number and qualifications of its members, the different classes of members, if any, the property, voting and other rights of each class of members and the liability of each and all classes, to dues or assessments, and with such further provisions in the articles of incorporation thereof and with such by-laws as the Council shall prescribe, fix and determine; and the House of Delegates at any meeting of any regular or special session thereof may by a vote of two-thirds of the members thereof present and acting, authorize, empower and direct the Council to grant, assign, transfer, convey or deliver or cause to be granted, assigned, transferred, conveyed or delivered to any of such corporations upon the formation thereof or to applicants for health and accident or other insurance in or from any of said corporations at or prior to the formation thereof without any consideration therefor, such funds and property, real or personal, of this Association as the House of Delegates shall from time to time authorize or ratify."

STATE AND COUNTY SOCIETY ACTIVITIES

YOUR COUNTY SOCIETY

A census of licensees of medicine in the city and county of San Francisco recently has been taken by the Membership Committee with some rather startling results. Quite often non-members, who are slow to recognize their organization obligations, as well as privileges, have queried, "Why should I belong to the County Medical Society when its membership represents only half of the doctors of medicine in the city?"

Here are the facts:

Physicians and surgeons licensed in San Francisco County (Directory of Board of Medical Examiners, March 3, 1934)	1521
Members of San Francisco County Medical Society (November 1, 1934)	809
Non-members	712

Non-members May Be Classified as Follows

Not eligible for membership*	110
Retired	109
Absent on leave or permanently absent	99
In Public Health Service	6
In United States Army or Navy Service	8
Deceased	14
Full-time life insurance positions	7
Homeopathic Society	40
First or second-year licensees in hospital service	37
Licensed over thirty years and never affiliated	126
All others	156
Total	712

*Constitutional restrictions on membership are responsible for the use of this grouping in our classification.

It is obvious from these figures that the society represents not 50 per cent, but 85 per cent of the available licensees in the county. If you are one of the 156, you are decidedly in the minority, and in the face of important changes now taking place in the medical world it behooves you as never before to affiliate with other physicians for mutual benefit.

To the Membership Committee and its auxiliaries in each hospital, the facts above noted should be an inspiration and an incentive to bring every hospital staff member into the society. Two hospitals now have 100 per cent representation. So far this year, 66 new applications for membership have been favorably acted upon. The present membership of 828 compares with 814 as of this date last year, *i. e.*, an increase of 14.

At no time since the beginning of the "depression" has growth been so rapid. Every eligible individual should be a party to such growth. This can be accomplished easily if groups of five members each bring in just one application or if every hospital group obtains eight applications.

Fellow member, the society is what you make it, and because of you now represents a large majority of available physicians. You can make it represent them all.

THE MEDICAL HISTORY OF CALIFORNIA

It is purposed to establish in the Association's central office a Bureau of the Medical History of California, and thus record the historical facts and incidents that have characterized California's medical activities. An appeal is made to members to aid in establishing this historical record.

The following documents and material are desired:

1. Minutes and records of medical organizations and societies.
2. Early histories of medical institutions, schools, hospitals, and clinics.
3. Early medical writings.
4. Biographies of medical pioneers.
5. Medical journals and books.
6. Instruments, saddle-bags, etc.
7. Photographs.

In fact, everything that is related to medicine, medical practice and medical organizations in the early days of California, will be welcome.

It is suggested that members explore their libraries and files and advise whether they are willing to contribute historical material to this Bureau of History. Your interest and assistance is solicited.

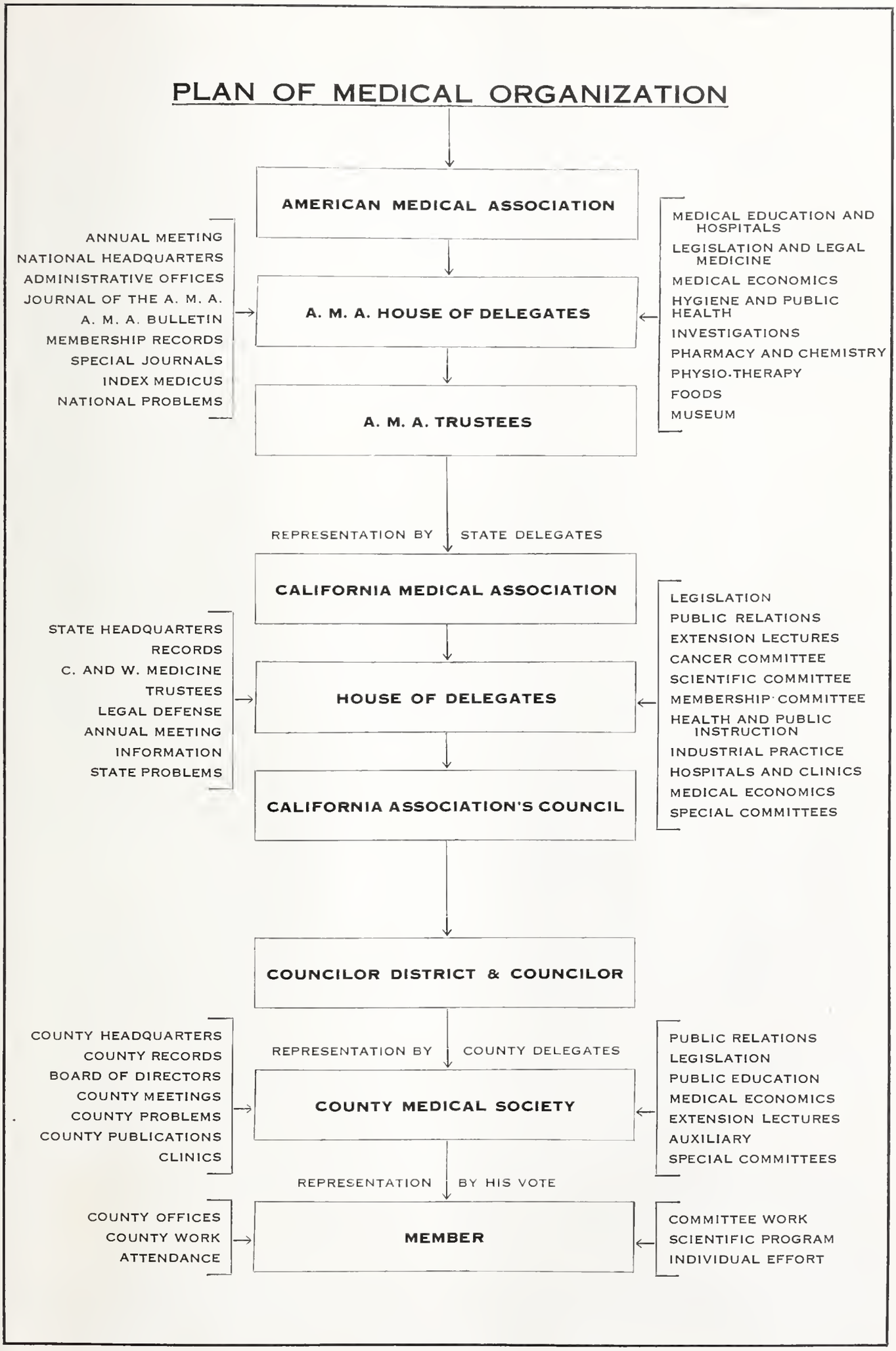
EDUCATION OF THE PUBLIC

One of the functions of a county medical society is to present to the public fundamental facts of modern scientific medicine for the purpose of building up sound public opinion relative to the questions of public and private health. To send out teachers, not advocates. The truths of scientific medicine, once imparted, are self-evident. This public education may be accomplished by means of talks before Parent-Teacher Associations, luncheon clubs, granges and similar organizations. It is hoped that county societies will embrace these opportunities.

PLAN OF MEDICAL ORGANIZATION

For informative purposes as well as for future reference, a diagrammatic illustration of the plan of medical organization is presented. This diagram enables one to clearly visualize a member's relationship to the county, state, and national organizations that compose our medical federacy. A member can easily perceive what his membership means and how his professional and personal interests are the concern of these interrelated bodies and their created committees.

The diagram also enables one to quickly present to the uninformed the interrelations of these several medical groups.


PLAN OF MEDICAL ORGANIZATION
AMERICAN MEDICAL ASSOCIATION
MEDICAL EDUCATION AND HOSPITALS
LEGISLATION AND LEGAL MEDICINE
MEDICAL ECONOMICS
HYGIENE AND PUBLIC HEALTH
INVESTIGATIONS
PHARMACY AND CHEMISTRY
PHYSIO-THERAPY
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ATTENDANCE
MEMBER
COMMITTEE WORK
SCIENTIFIC PROGRAM
INDIVIDUAL EFFORT

CALIFORNIA IN ORGANIZED RANKS

	Square Miles Area	Population	Population Per M. D.	Number M. D.'s	Association Members	Per Cent
New York	47,654	12,965,000	568	22,812	13,074	57
Pennsylvania	44,832	9,787,000	790	12,608	7,831	62
Illinois	56,043	7,826,000	678	11,504	6,879	59
Ohio	40,740	6,798,000	775	8,769	5,168	59
California	155,652	6,062,000	577	10,490	5,167	49

Did you know that:

1. California stands fifth in organized medicine ranks.
2. That 3,359 California doctors were Fellows of the American Medical Association—65 per cent of our members.
3. That 53 per cent of the members receive the *Journal of the American Medical Association.*
4. That about 60 per cent of the physicians of the United States are affiliated with their county and state organizations.
5. That to equal the country's average, 11 per cent of California's non-members should become members.

County societies are requested to secure the affiliation of at least 11 per cent of the non-members who are eligible before January 1, 1935. Will you achieve this in your county?

WORTH PONDERING OVER

1. Whenever the control of the practice of medicine has been wrested from the medical profession, it is found that either the public or the profession or both are dissatisfied with the result. Conversely, it is found that in those countries where the medical profession retains control of the practice of medicine, both the public and the profession are satisfied.
2. The medical profession and *not* commercial conjurers or political agitators must select the correct course, and this selection will be made in the interests of the public no less than for the continued freedom, independence and self-respect of medicine itself.
3. Economics is the science that deals with the material means of satisfying human desires. The health desires and needs of the public will be satisfied when we of the profession reflect the material means of coöperative loyalty and individual proficiency.
4. In attempting to arrive at a solution of our economic and professional problems it would be well to fully realize that by a united willingness to act courageously and effectively we will reveal a discipline, a resourcefulness, a fertility of invention, a capacity to develop leadership and respond to it that will enable us to stand before the entire world and avow our confidence in our own strength, our own purposes, our own way of life, and our own way of rendering professional services.
5. Respect and love the colleagues of your profession. But, if impossible, at least be patient. Do not discuss other physicians. To narrate their shortcomings is the shame of the wise man; to talk of their defects is the business of the small. A moment's discussion of a single error may work perpetual injury to a reputation. Consider such consequences. Every physician has his own characteristics and his own methods. Do not judge lightly. Respect the older physician and endear the younger to you. Stress their better side and refuse to comment on their treatment since you have not seen the patient.

"SEE YOUR MAN"

At the November election the voters determined who should represent them in the Senate and Assembly during the coming session of the legislature. These senators and assemblymen are your representatives. They are more or less dependent upon your advice and expressions as to what legislation should be enacted.

During January, bills will be introduced dealing with matters related to public health and medical care. Some of this proposed legislation is desirable for the best health interests of the public. Other bills will propose the enactment of very undesirable legislation. In order to decide rightly and constructively, members of the legislature will need dependable advice. Our members can and must impart reliable guiding information to senators and assemblymen. To that end it is urged that legislative committees of county societies contact their assemblymen and senator. "See your man," become acquainted with him; cultivate his confidence and supply him with dependable information on all health and medical legislation.

"See your man" and cause him to support sound, sane and safe health and medical legislation. Likewise, advise them in regard to the proposals that would not be to the best health interests of the people. "See your man" and help him to be a well-informed representative from your district.

UNITED IN MEDICINE

It is certainly a truism that the greatest inroads made into medical practice have been attempted always during periods of economic depression and social unrest.

Had it not been for strong, efficiently run medical societies in California, many infringements upon the rights of the practicing physician already would be in existence: corporations probably would be practicing medicine; tax-supported hospitals would be caring for patients who rightfully should employ their own physicians; patent medicine drug venders would be multiplied one hundredfold; chiropractors and naturopaths would have equal rights in medical practice with doctors of medicine and would be compulsory appointees to industrial compensation commissions and hospital staffs of State institutions. Were it not for strongly centralized medical groups, antivivisection laws probably now would be in effect with much pharmacological research at a standstill.

As a result of the efforts of medical groups, many fake cancer, physiotherapy, venereal, and other clinics have been closed. The public has been saved thereby much useless suffering, expense, and loss of health.

Simultaneously, standards of medical practice have been raised and malpractice insurance rates to ethical physicians lowered.

Despite the splendid work that has been done in the past, the medical profession is now confronted by both economical and ethical problems toward which all worthy practitioners should present a united front. I refer to such questions as social health insurance, panel insurance, compulsory state health insurance, standardization of private medical practice, further standardization and control of clinics and dispensaries, more practical methods of caring for indigents, and so forth.

The County Medical Society is the logical forum through which the ethical physician can crystallize his thinking, writing and talking, not only on subjects of scientific interest but also on matters of economic import and public welfare. The strength of the voice of organized medicine already has been felt in matters affecting the common weal. There are in San Francisco County only a few eligible physicians who are not at present affiliated with the society. These men have much to gain during these trying times for themselves and medicine by standing squarely with their fellows in medical society affiliation.

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COMPONENT COUNTY MEDICAL SOCIETIES

CONTRA COSTA COUNTY

The annual business meeting of the Contra Costa County Medical Society was held at the Hotel Carquinez, Richmond, on Tuesday evening, November 13. The meeting was called to order by Dr. Melvin M. Stauffer, over the dinner table, at 7:45 o'clock.

Dr. L. H. Fraser, who has been appointed chairman of the evening for the annual party to be held in December, made excellent suggestions for the success of the event. Doctor McCullough made a motion, which was seconded by Doctor Ford, that Doctor Fraser's suggestion that the party be a formal dinner dance, and held on December 8 at the Berkeley Country Club. The motion carried unanimously.

Doctor McCullough made a motion, seconded by Doctor Ford, that the society have a stag barbecue in the springtime at some suitable place to which the men who had accepted the invitation of the society to speak before them might be invited to attend, the Committee on Arrangements to consist of Doctors Christopher Leggo, Harry Ford, William Powell, and U. S. Abbott. The motion carried. Dr. U. S. Abbott wished it noted upon the minutes that he did not regard it as constitutional for this year's body to make arrangements for a social event for the coming year.

Dr. S. N. Weil, chairman of the Nominating Committee, announced the result of the work of the committee: President, W. S. Lucas; vice-president, Henry Ford; secretary-treasurer, Clara H. Spalding; censor for 1935-1937, William Powell; delegate to the State convention, U. S. Abbott; alternate-delegate, Kaho Daily.

Doctor McCullough moved, Dr. S. N. Weil seconded, that the decision of the committee be accepted *in toto*, and the secretary was ordered to cast a ballot for the society. Carried.

Reports of the standing committees for the year were:

Committee on Public Policy and Legislation.—Dr. Harry Ford, chairman, reported the year's activities. These were manifold, and the fact that the two initiative measures, known as No. 9 and No. 17, Chiropractic and Naturopathic, respectively, were so decisively defeated in the recent election, vouches for the importance and effectiveness of the work of the committee. Dr. U. S. Abbott, also a member of the committee, warned of the necessity of alert attention to very important legislation now pending.

Health and Public Instructions.—Dr. S. N. Weil reported that some addresses had been made before Parent-Teachers' organizations with beneficial results, he believed.

Membership.—Dr. Clara H. Spalding reported that the results this year had not been very gratifying, but that hopes were held for more new members in 1935, as several have signified their intentions of applying soon after the new year.

History and Obituary.—Dr. J. B. Spalding, chairman, reported the loss, through death, during the past year of honorary member Dr. Levi St. John Hely, and active member, Dr. Claude Leech. Doctor Spalding suggested that all stand in silence for a moment, in reverence to these splendid confrères.

Advisory Committee to the Woman's Auxiliary.—In the absence of Dr. M. L. Fernandez, Dr. S. N. Weil reported.

Public Relations.—As this committee is served by Doctor Ford as chairman, as well as the Committee on Public Policy and Legislation, Doctor Ford reported on both committees at the same time.

The "Pierce County Plan" was discussed by Drs. Stauffer, Ford, Abbott, Dozier, Rosa Powell, and McCullough. Doctor Ford made a motion, which was seconded by Doctor McCullough, that the local secretary inform the secretary of the State Association that the Contra Costa County Medical Society wishes to coöperate with the latter body in every way possible in attempting to develop a plan for the care of the semi-indigent; that the society is thoroughly aroused; the Committee on Public Policy and Legislation and the Public Relations Committee are working on such plans. This motion was carried. Suggestion was made that this Pierce County Plan be reviewed and condensed by the secretary and a mimeographed copy be sent to every member of the society.

Correspondence was read by the secretary: Letters from the California Medical Economic Survey; from Dr. Eugene Hall of San Bernardino, relative to SERA; from Dr. Emmett Clark, pertaining to his training school for office attendants.

The annual reports of the secretary-treasurer's offices were presented. Motion was made by Dr. U. S. Abbott, and seconded, that the reports be accepted and that a rising vote of thanks from the society be accorded the secretary-treasurer. This carried.

The meeting was adjourned at 10 o'clock by Doctor Stauffer.

CLARA H. SPALDING, *Secretary.*

HUMBOLDT COUNTY

The Humboldt County Medical Society met on the evening of October 18 at St. Joseph's Hospital, with O. R. Myers presiding. Eighteen members and fifteen nurses were present.

Doctor Norman, chairman of the Medical Jurisprudence Committee, reported regarding the local broadcast against Initiatives 9 and 17. The society voted to distribute five thousand cards, issued by the society, against the same bills and carry cards in the local papers.

The guests of the evening were Dr. Amos Christie of San Francisco, who spoke on *Anemia in the Infant and Child,* and Dr. Ernest H. Falconer of San Francisco, who talked on *Anemia of the Adult.* These subjects were excellently discussed and enjoyed by our members.

It was announced that we would have our regular election of officers at our meeting in November.

LAWRENCE A. WING, *Secretary.*

ORANGE COUNTY

Special Meeting.—A special meeting of the Orange County Medical Association was held on Tuesday, October 23, in the chapel of the Orange County Hospital. This was called at the request of the Orange County Division of the Public Health League. Present also were members of the Woman's Auxiliary, Nurses' Association, several newspapermen, as well as prominent lay people. Dr. L. A. Allison of Los Angeles gave a stirring address against Initiatives Nos. 9 and 17. On motion of Dr. H. Johnston of Anaheim, it was unanimously resolved that the Orange County Medical Association go on record as being opposed to Initiatives Nos. 9 and 17 and, moreover, that a copy of this resolution be given the Public Health League, to be used in any way they saw fit in their publicity campaign against these measures.

* * *

Regular Meeting.—The regular November meeting was held at the usual meeting place on November 6. Doctor Baker of the Medical Economics Committee reported progress in the study of the San Fernando plan and its applicability to our needs in Orange County. More was heard of the campaign conducted by the Public Health League. Doctor Nall furnished a financial report. A first reading of the application of Dr. Russell Johnson of Westminster was heard. Dr. Arthur B. Wade of Santa Ana was elected to membership. The district councilor of the first district, Doctor Roblee, was with us and talked on several important matters affecting the California Medical Association. The matter of "gyp" collecting agencies was brought up, and after one man revealed his difficulties, fully half of the members present confessed to similar experiences. It was then unofficially decided to report all cases to the secretary, who would

in turn convey the details to the State Board of Medical Examiners. Dr. George S. Sharp of Pasadena gave the scientific paper of the evening. His subject was *Diagnosis and Treatment of Malignancies of the Head and Neck.* His talk was beautifully illustrated with lantern slides. After considerable discussion the meeting adjourned. WALDO S. WEHRLY, *Secretary.*

SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held on Monday evening, November 12, in the Bissell Auditorium of the Cottage Hospital.

Both President Markthaler and Vice-President Van Paing being absent, the meeting was called to order by Dr. H. J. Ullmann.

Dr. Clyde Emory of the Radiation Laboratory of the California Institute of Technology gave a most interesting and instructive talk on four years' experience in treating malignancies of the prostate with high-voltage tubes. The paper was discussed by Drs. Robinson, Ullmann, and Wills.

Doctor Gray reported for the Committee on Communicable Medical Service, stating that definite arrangements had to be made regarding financing, and that unless the society was practically unanimous in endorsing the action of the committee the plan should be rejected.

It was voted that the subject be considered at the December meeting. WILLIAM H. EATON, *Secretary.*

SAN JOAQUIN COUNTY

The regular monthly meeting of the San Joaquin County Medical Society was called to order in the Medico-Dental clubrooms, Stockton, November 1, at 8:20 p. m. by Dr. P. B. Gallegos.

The purpose of two board of directors' meetings was the furnishing of the San Joaquin County Chapter of the California Public Health League with a sum, not to exceed $450, for purposes of defraying advertising in the papers against Initiatives 9 and 17.

Dr. T. C. O'Connor of Bret Harte Sanatorium gave a report on the formation of the Motherlode Medical Society, whose members are to consist of the allied branches of healing. This society is for better understanding of the other profession's viewpoint and for binding the professions together in the event of further legislation.

Mr. Paul Riordon presented the entrance of Lloyds Insurance Company into the field of professional insurance. Drs. Dewey Powell and P. B. Gallegos gave a glowing account of the help that the Medical Protective Insurance Company, Fort Wayne, had been to them in their recent trials.

Dr. C. A. Broaddus presented a report on the activities of the San Joaquin County Chapter of the California Public Health League, and urged that every member of the medical society sign and mail, without fail, the fifty cards sent them by the California Medical Association. He also stated that the dental society had put $50 at the disposal of the local Chapter in the fight against Initiatives 9 and 17. He urged that every member of the medical society who is not already a member of the California Public Health League immediately sign up so that we could have more people behind us in our fight.

Dr. P. B. Gallegos gave a report on the survey being conducted by the California Economic Survey, and stated that any members who had lost their blanks could obtain a new one from the secretary.

The nomination of officers for the year of 1935 was the next business transacted.

The scientific paper of the evening was given by Dr. Carl Hoag of San Francisco, who presented a very interesting and instructive dissertation on *Common Surgical Problems, with Special Reference to Appendicitis.* This paper was extremely well presented and very well received by the members present. Doctor Hoag commented on Doctor Dameron's pioneer work in *Non-drainage of the Abdomen.* This paper was discussed by Doctors Dameron, Chapman, Doughty, C. V. Thompson, Sanderson, Lynch, Gallegos, Broaddus, Dewey Powell, and Hoag.

There being no further business to be brought before the society, the meeting was adjourned at 10:45 p.m. and refreshments were served.

G. H. ROHRBACHER, *Secretary.*

SONOMA COUNTY

The Sonoma County Medical Society held a very enthusiastic and well-attended meeting on November 8 at the Mark West Springs Hotel. Thirty members and guests were present. Dr. E. J. Finnerty of Sonoma, president of the society, presided.

Dr. Thomas E. P. Gocher of San Francisco, surgical adviser for the Aetna Life Insurance Company and affiliated companies, gave an interesting, worthwhile and highly instructive talk upon the *Treatment of the Sympathetic Nervous System and Its Effect on Post-operative and Post-traumatic Industrial Injuries.*

Reports of the activities of the members of the society in the late political campaign were made, official and unofficial communications were read. Two applications for membership were received.

By a rising vote, the secretary was instructed to indite a letter of sympathy and condolence to Mrs. Phillips, who has recently suffered the loss of her husband, Dr. P. T. Phillips, an honored member of the medical fraternity of the State.

Other routine business was transacted. Dr. Gocher also presented a paper on the observations being made in the cases of lead poisoning in industrial work.

An excellent dinner was partaken of, and all members expressed their enthusiasm and gratitude for the work our society is doing. W. C. SHIPLEY, *Secretary.*

TULARE COUNTY

A regular meeting of the Tulare County Medical Society was held at Motley's Café on Sunday evening, October 28. Dinner preceded the educational program.

Dr. J. R. Hicks, vice-president, called the meeting to order. Among the communications read was one from the chairman of a committee appointed in San Bernardino County relative to the question of medical services rendered in the Government's SERA program. No definite plan of action was taken by the society at the present, though it was the general expressed opinion that some plan of payment for services rendered should be worked out.

The Initiatives Nos. 9 and 17 on the coming ballot were brought to the attention of the members, and a report was heard of the publicity afforded these measures in our various communities of Tulare County.

The University of California postgraduate clinical sessions to be held in Fresno, beginning November 2, were brought to the attention of the members. It was urged that as many attend these meetings as possible.

The educational program consisted of an illustrated talk by Dr. Nelson P. Anderson, dermatologist from Los Angeles. He presented a very able discussion of *The Diagnosis and Treatment of the More Common Skin Diseases.* KARL F. WEISS, *Secretary.*

VENTURA COUNTY

The County Medical Society members and their wives were invited to the Billiwhack Dairy farm, in Aliso Canyon, for an inspection tour of the dairy, and a barbecue.

The trip through the dairy barns was very instructive and interesting, after which a very fine barbecued supper was enjoyed in the patio of the manager's home. FRED A. SHORE, *Secretary.*

CHANGES IN MEMBERSHIP

New Members (27)

Alameda County.—Carl Donald Benninghoven, James B. Graeser.

Fresno County.—Willis Bird, Olline B. Doyle, Luther G. Price.

Los Angeles County.—Benjamin S. Hollombe, Clayton H. Palmer, Floyd H. Racer, Edwin P. Wallace.

Napa County.—Phillip H. Wells.

Orange County.—Arthur B. Wade.

San Francisco County.—Edmund F. Anderson, Lois H. Brock, John Morris Carter, Herbert L. Dryfoos, Roberto F. Escamilla, Harris M. Fishbon, Thelma G. Harmon, Edmund J. Mahon, Morris H. Silverberg, Thad John Whalen.

Santa Barbara County.—Laurence E. Heiges, Jr., Robert W. Hunt, Robert W. Lambuth, Lee Henry Streaker.

Santa Clara County.—Don Carlos Hines, James Ward Slattery.

Resigned (1)

Wilbur Bailey, from San Francisco County.

In Memoriam

Lamkin, Burt B. Died at Fresno, October 22, 1934, age 58. Graduate of the College of Physicians and Surgeons of San Francisco, 1902. Licensed in California, 1903. Doctor Lamkin was a member of the Fresno County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

✝

Phillips, Percy Todd. Died October 29, 1934, age 66. Graduate of the Western Reserve University School of Medicine, Cleveland, 1889. Licensed in California, 1899. Doctor Phillips was a member of the Santa Cruz County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

OBITUARIES

Percy Todd Phillips
1868-1934

Percy Todd Phillips died at his home in Santa Cruz after a long illness on November 29, 1934.

He had lived and practiced in Santa Cruz for thirty years, and in that time had devoted himself to the welfare and health of the people of his community and to the affairs of his profession through his untiring efforts in the California Medical Association and as a member and president of the California State Board of Medical Examiners.

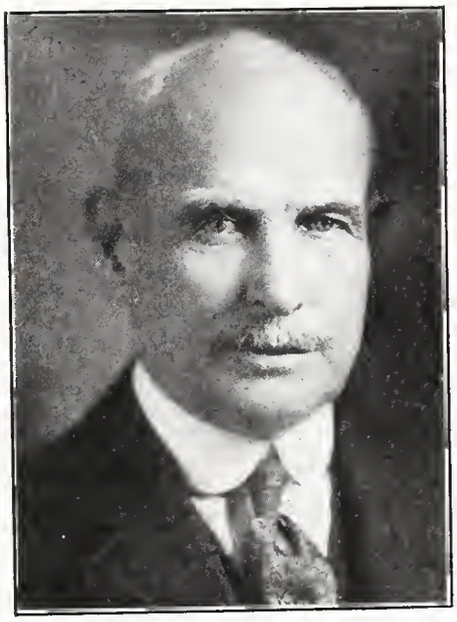
He was made president-elect of the California Medical Association at Oakland in 1926 and president in 1927-1928.

In all of his offices in the Association he was indefatigable in seeking the good of the Association and the betterment of medicine and the physicians in California, and his service on the Board of Medical Examiners was marked by the same ability, judgment, and sense of responsibility that we in the California Medical Association had found to be characteristic of him.

His family, all of his patients, and many other people of his neighborhood and the California Medical Association will miss him and his kindness, capability and conscientious devotion to his chosen work.

Therefore, Be It Resolved, That the Council of the California Medical Association express its sorrow at his death and its consciousness of the loss that organized medicine has suffered, and direct that this resolution be spread upon the minutes, and a copy sent to his family.

✝



Stanley Stillman*
1861-1934

California's best beloved surgeon has gone. He died of bronchial pneumonia, October 15, 1934. . . .

Stillman's nature was a complex of qualities not easily to find duplicated—proud, independent, critical, even irascible; yet kindly, sensitive as a woman, sympathetic to the point of tears in the presence of a pathetic situation.

As a surgeon, he was not merely competent and skillful, but was gifted with an extraordinary human understanding, as honest, too, with himself as in his professional relations. He was not a student in the usual acceptation of that word, but he was an acute observer and apt to be as much interested in the personality of his patient as in his malady. It is a pity that Stillman contributed so little to surgical literature, for with a mental make-up peculiar to himself he could have reached a far wider audience than that of the classroom, and his message would have been worth while,

As a teacher, he had a great knack of painting word pictures which have become almost proverbial in his students' memories. His students adored him, even when savagely critical, as he sometimes was, for they could not but rise to his sterling honesty and his uncanny instinct which dictated his action and his words.

His father was Dr. J. D. B. Stillman, a pioneer physician and surgeon of California, who, with Dr. John F. Morse, operated, I believe, the first hospital in the State, the first two-story building in Sacramento. He was family physician to Governor Stanford and other

* This obituary consists of some paragraphs from a sketch by Emmet Rixford, M. D., in the *Bulletin* of the San Francisco County Medical Society.

prominent people of the time; wrote for the Governor the text of his book, "The Horse in Motion"; did much for San Francisco's public schools in the early days.

Stanley was born in Sacramento August 23, 1861, attended the Boys' High School in San Francisco when it was on Powell Street, near Clay. He then entered the University of California in the class of 1882. He was not graduated, for at the end of his second year he was taken to Redlands, California, by his father and put in charge of the old gentleman's vineyard. After three years of ranching, pruning and cultivating grape-vines, driving four-horse team, etc., he broke away, much against his father's will, and entered Cooper Medical College. He was graduated in 1889.

He soon entered the teaching staff and was made professor of surgery in 1898, which position he held until Cooper College had graduated its last class(1912). In 1909, when Stanford University organized its medical faculty, Stillman was made professor of surgery and executive head of the surgical department. He continued in this position until retirement under the regulations of the University, when he reached the age of sixty-five. Following his retirement he spent much of his time in travel, but more recently passed his summers at The Cedars, a club near Summit Soda Springs, his winters in his beautiful place at Belvedere, where he took supreme delight in his garden. . . .

CANCER COMMISSION*

II†

II. Tumors of the Small Intestine

Introduction

Malignancy of the small intestine is rare, comprising approximately 7 per cent of all intestinal cancers. Until recently they have been diagnosed relatively late, but should be recognized earlier. One author found 37 per cent had symptoms leading to the diagnosis and 46 per cent were asymptomatic. Early diagnosis, of course, is essential for cure.

A. Recognition.

1. *Symptoms*—variable, dependent upon degree of obstruction and, as a rule, they are recurrent in attacks.

(a) *Pain*—diffuse, shifting in character, usually in mid-abdomen, dull and aching or sharp and cramp-like.

(b) *Nausea and vomiting*—present, but not marked. Often unassociated with any severe pain.

(c) *Malaise, anorexia, and loss of weight*—are the symptoms of the gradual increasing tumor.

(d) *Borborygmi and patterned intestinal distention*—frequently observed.

(e) *Blood*—vomited or passed per rectum may occur.

(f) *Secondary anemia and cachexia*—due to loss of blood as well as invasion of other viscera.

(g) *Jaundice*—if tumor arises in the duodenum.

2. *Physical Findings.*

(a) *Distention*—usually constant, increased at times and often patterned and occupying the central abdominal area.

(b) *Peristalsis*—active, visible, and audible. With the stethoscope definite peristaltic rushes with staccato booming noises as the gas passes the point of obstruction.

(c) *Abdominal mass*—palpable, often inconstant in presence and quite often freely movable.

3. *Laboratory Aids.*

(a) Blood count—for evidence of anemia.

(b) Gastric analysis—for evidence of emptying time, any persisting content and the presence of blood.

(c) Stool examination, under proper control—for occult blood.

(d) Roentgenographic study—for evidence of stasis or filling defect.

B. Pertinent Questions.

1. *What constitutes an adequate investigation?*

(a) A painstaking history as to above symptoms.

(b) Repeated studies of the abdomen, especially one hour after a meal for the type of peristalsis and direction of same.

(c) Laboratory studies as outlined.

2. *What constitutes a proper investigation by x-ray?*

Fluoroscopic as well as a serial film examination taken every hour for five hours following an opaque meal. A barium meal composed only of barium and water is preferred by some. The points to be observed are any persisting dilatation of the lumen, delay in the progress of the meal, and any defect of a filling or outpocketing type.

3. *Of what significance are negative x-ray findings?*

Statistics show, up to the present time, that malignant lesions of the small intestine when demonstrated by x-ray have been usually inoperable. Therefore, a negative gastro-intestinal series does not rule out malignancy of the small bowel.

4. *In a suspected, but not proved, tumor of the small intestine, should exploration by surgery be employed?*

Yes. Since an early exact diagnosis is difficult, if success is to be attained, thorough investigation before inoperable metastases have occurred is necessary.

5. *What is the proper operative procedure in a tumor of the small intestine?*

(a) *When not definite* an exploration by direct vision and palpation of the entire length of the small intestine, including, of course, the duodenum, which is often overlooked because of its fixed position.

(b) *When definite.*

(1) If acutely obstructed and in poor condition, only an enterostomy, followed later by resection with side to side or end to end anastomosis by any of the recognized closed or open methods.

(2) If not acutely obstructed, preferably an immediate one-stage resection and anastomosis with, or without, a proximal enterostomy.

(3) If resection is unwise because of the extent of metastases, a side-tracking anastomosis about the tumor may give relief from any obstruction for the remainder of life.

(4) If the tumor should be of a lymphosarcomatous type, roentgen-ray therapy, not surgery, should be employed.

6. *Should a lymph node ever be removed for diagnosis?*

Yes, always, for experience has shown that inflammatory tumors are frequently mistaken for cancer and an established diagnosis of lymphosarcoma calls for x-ray therapy with reasonable prospect of materially prolonged, comfortable life.

7. *Is pre- and postoperative care of any special importance?*

Yes. Since the diagnosis is usually made on symptoms of obstruction, which interferes with the patient's fluid and acid base absorption and loss, special attention to the sodium and chlorid ion content and the fluid demand must be made. Also the use of the gastric and duodenal lavage and drainage via the nasal tube, postoperatively, prevents accumulation of the upper gastro-intestinal content and gives rest to the operated area, insuring thereby a smoother and safer convalescence.

C. The Types of Malignancy.

1. *Carcinoid tumor.* This is an epithelial tumor considered by some as non-malignant, but by others as similar to basal-cell carcinoma of the skin, since it extends only by local invasion and metastasizes very rarely.

2. *Adenocarcinoma.* A glandular outgrowing tumor, frequently arising on the basis of a polyp. Ulceration occurs early, and metastases, as found with the present stage of diagnosis, occurs in approximately 53 per cent of instances. Prognosis is best when the growth

* The Cancer Commission was brought into being by the House of Delegates of the California Medical Association to aid in the furtherance of all efforts to combat cancer. The roster of officers and the central office of the Commission to which communications may be sent is printed in this issue of California and Western Medicine (see front cover directory). This is one of a series of reports by special committees of the California Medical Association.

† Part I of this report was printed in the November issue, page 348.

is in the jejunum and least favorable when in the ileum.

3. *Sarcoma.* Occurs as an annular lesion, but expansive type of growth involves all coats.

4. *Lymphosarcoma (malignant lymphoblastoma).* Characterized by gross involvement of the local lymph nodes, invasion of the intestinal wall from the mesenteric side, tendency to encircle the lumen and frequently occurs in multiple lesions.

(To be continued)

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

MRS. PHILIP SCHUYLER DOANE .....President
MRS. ELMER BELT.....Editor and Chairman of Publicity

State Auxiliary News

Election Efforts.—From every county Auxiliary, reporting in the recent months, came evidence of keen realization of the grave dangers that lay in the Chiropractic and Naturopathic Initiatives 9 and 17. Programs featured speakers telling of the full intent and significance of these proposals, and plans for carrying this information to the voting public and of otherwise assisting in the defeat of these measures were discussed and put into effect with earnest effort. Now that the ballots are in and counted, our members are rejoicing in the thought that their help played some part in the final rejection of these bills. Typical of the auxiliary's aid, is the work done by the counties of Alameda and Los Angeles. Mrs. William H. Sargent, Alameda's energetic president, and her co-workers sent out the amazing total of seventy thousand letters to the voters of the bay district. In Southern California, Mrs. John V. Barrow, Los Angeles County president, also did a magnificent piece of work. Believing that a direct, individual appeal was a most effective method of approach, Mrs. Barrow chose from the auxiliary ranks members who hold an outstanding position in each major organization of women in the city. The auxiliary members then sent letters with personally written salutations and signatures to every member on each club's roster; committees addressed them, and fourteen thousand were thus mailed. Other auxiliary members addressed another six thousand to the voters of the county. Then to help the Public Health League gather the finances necessary for the printing and mailing expenses of the letters used in the campaign, Mrs. Barrow organized and directed a group of fifty-three of the younger members in an office-to-office canvass for contributions covering the entire city. For the acute cases of writer's cramp and weary feet that developed during the thick of the fray, victory is sweet remedy.

* * *

Appointments and an Appreciation.—Completing the state roster of officers and directors, President Doane announces the appointment of Mrs. J. F. Conzelmann of Stockton as councilor for the fourth district and of Mrs. Frederick F. Gundrum of Sacramento as parliamentarian. This brings the official family of the State organization to twenty members.

* * *

Dr. Frederick C. Warnshuis, who, besides his post as secretary-treasurer of the California Medical Association, is on the advisory board for the auxiliary, met with Mrs. Doane and the convention chairman, Mrs. Frederick N. Scatena of Sacramento, for a conference in San Francisco on the plans for the State convention in Yosemite in the spring.

* * *

Adopted at the governing council and signed by Dr. Kendall Emerson, comes this expression of thanks to the California State and Los Angeles County Auxiliary boards who formed the Women's Reception Committee under the leadership of Mrs. Philip Schuyler Doane at the recent convention in Pasadena:

"*Resolved,* That the officers and members of the American Public Health Association present at its sixty-third annual meeting in Pasadena are particularly grateful for the charming arrangements which have contributed so much to the success and pleasure of the meeting, made by the Women's Reception Committee through its chairman, Mrs. Philip Schuyler Doane."

* * *

County Auxiliary Reports

Alameda County.—The Woman's Auxiliary to the Alameda County Medical Association held its regular meeting on Friday, September 21, at the Women's Athletic Club, Oakland, at one o'clock. Following the luncheon, *Juvenile Delinquency* was discussed by Mr. Leonard Meltzer, attorney, from the standpoint of the law, and by Mrs. Otis Lloyd Lamson of Seattle, from the humanitarian point of view. It was a pleasure and inspiration to hear Mrs. Lamson discuss this subject which is so close to her heart, and then as second vice-president in the National Auxiliary have her give definite suggestions as to how we may aid the medical profession. Our own state president, Mrs. Philip S. Doane, who had been resting in Carmel, motored up for the occasion and brought us a sparkling and crisp greeting. Due to the length of our program she was reluctant to speak longer; however, we have extended to her a cordial invitation to return soon and to present her plans for the coming year.

The chairman of the Nominating Committee, Mrs. Carl Bowen, and the chairman of the Revisions committee, Mrs. Thomas Clark, gave the first reading of their reports which will be voted upon at the November meeting. The 125 members present were unanimous in their praise of this excellent meeting.

On Tuesday evening, October 23, at the Women's Athletic Club, Oakland, the Alameda Auxiliary were hostesses to their husbands at the annual dinner. Mrs. William H. Sargent, president, after welcoming the guests, called upon Dr. Frank Baxter, president of the Alameda County Medical Society, for a greeting from the society. He briefly reviewed the assistance the auxiliary had given to them in the past, and asked for help in defeating Initiatives 9 and 17 on the ballot for the November election. After the introduction of the guests at the speakers' table a musical program followed. One of the objectives of the auxiliary is to further a more friendly feeling among the doctors and their families. Judging from the increased attendance each year and the friendly atmosphere present, we feel that we are accomplishing this. There were 175 reservations.

MRS. WILLIAM H. SARGENT, *President.*

* * *

Los Angeles County.—The October luncheon at the Hollywood Knickerbocker on the 16th was followed by a busy and enthusiastic session. Mrs. John V. Barrow, president, had asked Dr. Lowell S. Goin to explain Initiatives 9 and 17 of the November ballot, which he did with clarity and force. Dr. John W. Crossan spoke for the Public Health League and asked the auxiliary to collect funds for the League, to be used to meet the printing and mailing cost of the campaign against these measures. The report of the Nominating Committee was read by the chairman, Mrs. W. H. Olds. The address of the day upon *Eugenics* was given by Dr. Arthur D. Houghton, Fellow of the Royal Horticultural Society, physician and scientist, who held the interest of every listener with his comprehensive survey and able illustrations.

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. A. Elmer Belt, chairman of the Publicity and Publications Committee, 2200 Live Oak Drive, Los Angeles. Brief reports of county auxiliary meetings will be welcomed by Mrs. Belt and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for the Woman's Auxiliary notes.

Three teas have added to the county activities during the month. On October 12, Mrs. Mark Glaser, Hygeia chairman, invited to her home the local state and county officers, Parent-Teachers Association representatives, and her committee, to discuss ways and means of promoting the giving of *Hygeia* subscriptions and of *Healthyland* as holiday remembrances. On October 19 the Santa Monica Bay group of the county entertained at the home of Mrs. Raymond Sands. Officers and directors of both state and county were there to meet the members from this residential district. Music, tea, and much gay conversation made the afternoon delightful. On November 8, Mrs. T. E. McGuire of Sunset Canyon Drive, assisted by other Burbank hostesses, welcomed to her home many members from North Hollywood, Van Nuys, San Fer-, nando, Glendale, Burbank and other districts of the San Fernando Valley, to meet Mrs. John V. Barrow and her board. Talks by Mrs. Barrow and Mrs. James F. Percy on past and future projects, songs by the talented daughter of the hostess, and friendly bits of discussion over the teacups are pleasant memories of the day.

Mrs. Elmer Belt, *Corresponding Secretary.*

* * *

Sacramento County.—The first regular meeting of the fall season was held at the home of Mrs. H. J. Davis, with the president, Mrs. Howard Hall, presiding. Reports from the treasurer and the membership chairman were heard. Mrs. Frank Krull reported on the work done at the county hospital, which is proving very successful, the patients are enjoying the reading matter, and the committee asked for more books and magazines, and also for more workers. Mrs. Scatena reported on State affairs and Mrs. Henderson asked for volunteer workers for the Community Chest drive. After the business meeting, bridge was enjoyed and later refreshments served by Mrs. Davis and the assisting hostesses, Mrs. Howard Hall, Mrs. E. O. Brown, Mrs. Philip Young, Mrs. W. W. Kress, and Mrs. D. McLean.

The October meeting on Tuesday the 16th was a tea at the Del Paseo Country Club. Mrs. Robert Peers of Colfax was the hostess and the occasion honored our illustrious member, Mrs. A. M. Henderson. Reservations were made for fifty-five members. The meeting was called to order by the president, Mrs. Howard Hall. All business was dispensed with except for an urgent message from the doctors to work and vote against Initiatives 9 and 17 at the November election. Mrs. H. Kanner sang, accompanied by Mrs. Zue Pease. Miss Cornelia Provines gave the address of the afternoon, entitled *Robinson Jeffers and Eugene O'Neil—A Comparison and Contrast.*" Tea was then served and a social hour ensued.

Mrs. Frank P. Brendel,
Corresponding Secretary.

* * *

San Diego County.—The membership drive, which began in September, has brought in four doctors' wives, who joined the ranks at the October meeting. Dr. L. C. Kinney, the speaker of the day, reviewed pending legislation and explained the Initiatives 9 and 17. Mrs. Ben F. Eager, *Secretary.*

* * *

Santa Barbara County.—The Woman's Auxiliary to the Santa Barbara Medical Society met at the home of Mrs. Harold Schwalenberg on Friday, October 5, at three o'clock. Mrs. Van Paing presided, and there were eleven members present. As part of our health program for the year, Mrs. Henderson moved that each member subscribe to *Hygeia,* mark each article of interest for school use, and pass it on within a month to one of the public schools in the city. Mrs. Holzman was named *Hygeia* chairman. Mrs. H. F. Pierce, the Program chairman, asked for an expression of interest in hearing the three-unit health plan as well as the district plan presented by the advocates of each, and it was decided to ask the doctors to explain each of these plans. Dr. William Remfry Hunt, a member of the Advisory Council, reviewed the need for specific measures being taken to diagnose potential criminals. He suggested that a behavior record as well as a physical one be kept by all schools. Dr. Elizabeth Bishop, director of research at the Santa Barbara College, presented some interesting case histories, bearing out the fact that if recognition of mental symptoms is made early, much can be done to prevent the individual from becoming a menace to society. Dr. Edward Lamb, school physician, gave a good idea of how the application of various health measures, preventive principally, worked out in the city schools. He suggested as the first step in our own health program, a request for a visiting nurse whose duty it would be to investigate the home conditions of misbehaving as well as physically inferior children. Tea was served by the hostess, Mrs. Henderson, and Mrs. Findlay presiding.

Mrs. William Remfry Hunt, *Secretary.*

* * *

Orange County.—The Woman's Auxiliary to the Orange County Medical Association held its November meeting at the Ebell Club of Santa Ana on Tuesday, November 6, with Mrs. Hiram Currey acting as chairman of the group of hostesses. This being a reciprocity meeting, representatives of the Federated Women's Clubs of the county were present as special guests. Mrs. Ray Green, chairman of the Committee on Public Relations, welcomed the guests and spoke briefly, explaining the purposes of the auxiliary. Mrs. D. R. Ball, Program chairman, introduced the speaker of the day, Mr. Ben H. Read of the Public Health League of California, who gave an interesting and instructive talk on *Medical Legislation.* He described the methods by which bills are introduced and procedure followed in the legislature before these bills become laws. He stated that about 10 per cent of all the bills introduced have to do with health problems and summarized various bills of this nature to be brought before the legislature in the near future. It was for the purpose of safeguarding the public welfare that the Public Health League was formed as a political organization to represent the medical profession and other allied professions when these bills are introduced. Mr. Read expressed his appreciation of the assistance the women of the auxiliary gave in this recent campaign. Following the business session Mrs. Juanita Ross of Anaheim delighted those present with a group of songs, and members enjoyed a social hour mingling with the guests of the day while the hostesses served tea. Hostesses for the day were Mesdames Hiram Currey, S. Theron Johnston, P. B. Gillespie, H. MacVicker Smith, Lawrence Whitacre, Merrill Hollingsworth, B. W. Hardy, F. M. Findlay, H. C. Nelson, and Newell Moore.

Elizabeth M. Sutherland, *Secretary.*

NEVADA STATE MEDICAL ASSOCIATION

HORACE J. BROWN, M.D.....Associate Editor for Nevada

* * *

E. E. HAMER, Carson City .....President
R. O. SCHOFIELD, Boulder City.....President-Elect
C. E. SECOR, Elko.....First Vice-President
HARRY W. SAWYER, Fallon.....Second Vice-President
HORACE J. BROWN, Reno.....Secretary-Treasurer

THIRTY-FIRST ANNUAL SESSION OF THE NEVADA STATE MEDICAL ASSOCIATION

First Day's Session

The thirty-first annual meeting of the Nevada State Medical Association was called to order at Bowers Mansion by President D. Angus Smith on September 21 at 9:55 a. m. The president's address consisted of a welcome to those present and his wish that the meeting would prove both pleasant and profitable.

SCIENTIFIC PROGRAM

The scientific session was then taken up and was as follows:

Miley B. Wesson of San Francisco read a paper on *Urinary Calculi, Cause and Treatment.*

Colin C. McRae of San Francisco read a paper on *Some Principles in the Treatment of Fractures of the Forearm.*

Under a special order of business, Thomas W. Bath of Reno read the report on the Committee on Military Affairs.

George L. Stivers of Fall River, Massachusetts, read the paper on *Types of Pleuropulmonary Adhesions.*

William P. Lucas of San Francisco read a paper on *Problems of Growth and Development During Childhood.*

BUSINESS MEETING

The first order of business was the reading of the minutes of the last annual meeting. On motion of S. K. Morrison, seconded by Fleet H. Harrison, this was dispensed with.

The following named members were elected to membership: Lloyd S. Bambauer of Fernley, I. E. Benveniste and J. M. Kehoe of Boulder City, Louis E. Lombardi, Lawrence Parsons and Rodney Wyman of Reno, Noah Rouse of Carson City, and G. J. Sylvain of Goldfield.

On motion of J. L. Robinson, seconded by A. W. MacPherson, these new members were elected to membership.

The delegate to the American Medical Association reported that he was unable to attend the annual meeting of that body and was unable to find a substitute.

On motion of Fleet H. Harrison, seconded by W. A. Shaw, the following were admitted to honorary memership: Colin C. McRae, George L. Stivers, Lewis Michelson, William P. Lucas, and George Hosford.

Election of Officers.—The president called for nominations for president-elect. Thomas W. Bath nominated J. N. Van Meter of Las Vegas, seconded by J. T. Reese. E. E. Hamer nominated Harry W. Sawyer of Fallon, seconded by R. A. Bowdle. Fleet H. Harrison nominated R. O. Schofield of Boulder City, seconded by M. A. Robison. C. E. Piersall moved, seconded by R. A. Bowdle, that the nominations be closed. So carried. The president appointed A. C. Olmsted and George R. Smith as tellers. R. O. Schofield, having received the majority of ballots cast, was declared elected. The following were elected without opposition: first vice-president, C. E. Secor of Elko; second vice-president, Harry W. Sawyer of Fallon; secretary-treasurer, Horace J. Brown of Reno; trustee for three years, Fleet H. Harrison of Minden.

Necrology Committee Report. — the Necrology Committee reported the following deaths since the last meeting: R. H. Hawkins of Fallon and F. J. Crane of Reno. Thomas W. Bath read a memoriam for F. J. Crane.

Place of Next Year's Meeting.—C. E. Secor invited the Association to hold its next annual meeting at Elko. The invitation was extended on behalf of the Elko County Medical Society. Moved by R. A. Bowdle, seconded by M. A. Robison, that the Association accept this invitation. Motion carried.

Amendment to By-Laws. — R. A. Bowdle presented the following amendment to the By-Laws to be acted upon at the next annual meeting: An amendment, Article IX, Section 3, of the Constitution. Pertaining to the election of officers of 1935. The first vice-president shall be considered elected to the office of president-elect, beginning at the seating of the new president at the annual meeting in 1936. The second vice-president shall succeed to the first vice-presidency in the same manner and at the same time.

The meeting was adjourned until 9 a. m. September 22, 1934.

Second Day's Session

The meeting was called to order at Bowers Mansion at 9:45 a. m. by President D. A. Smith.

Scientific Program.—R. O. Schofield of Boulder City, Nevada, read a paper on *Industrial Work at Boulder Dam.*

Lewis Michelson of San Francisco read a paper on *Stricture of the Ureter in the Female—Its Diagnosis and Treatment.*

William W. Washburn of San Francisco read a paper on *Malignancies of the Gastro-Intestinal Tract—Some Clinical Aspects.*

George Hosford of San Francisco read a paper on *The Present Status of the Treatment of Strabismus.*

Introduction of Officers.—Dr. E. E. Hamer of Carson City was presented and seated as president for the incoming year by the outgoing president, Dr. D. A. Smith of Mina. Doctor Hamer made a pleasing speech of acceptance.

At 8 p. m. the members, guests, and ladies met at the Riverside Hotel, where a splendid dinner dance was enjoyed by all.

Members in Attendance. — The following members were in attendance at various times during the meeting: Horace J. Brown, L. S. Bambauer, Thomas W. Bath, R. A. Bowdle, Anna B. De Chene, A. R. Da Costa, E. E. Hamer, Fleet Harrison, W. H. Hood, A. J. Hood, Dwight Hood, D. J. Hurley, T. H. Harper, L. E. Lombardi, Arthur E. Landers, D. G. Lynwalter, F. J. Morley, A. W. MacPherson, S. K. Morrison, A. Miniggio, George Magee, V. A. Muller, A. C. Olmsted, C. E. Piersall, Lawrence Parsons, M. A. Robison, G. Ross, J. L. Robinson, D. A. Smith, W. A. Shaw, John T. Rees, R. O. Schofield, N. Smernoff, G. R. Smith, Harry Sawyer, D. A. Turner, R. E. Wyman, J. N. Van Meter, M. R. Walker, C. W. West.

The following honorary members and visitors were also present at various times during the meeting: Mrs. L. S. Bambauer, Dr. J. M. Coulter, Dr. C. Harper, Wayne Dillard, E. D. Carville, Dr. Kaspar Pischel, Lester Hilp, Mr. K. E. Kather, A. R. Kilgore, George N. Hosford, I. V. Decker, Thomas Lee, Mrs. H. B. Largent, P. Lucas, H. B. Largent, Jack O'Neill, Colin C. McRae, Lewis Michelson, J. E. Tillotson, George L. Stivers, Burnett Rixford, Max Rothschild, J. B. Rackerby, Richard Travers, Cecil F. Simmons, Miley B. Wesson, W. W. Washburn, A. L. Voelkle.

HORACE J. BROWN, *Secretary-Treasurer.*

COMPONENT COUNTY MEDICAL SOCIETIES

WASHOE COUNTY

The Washoe County Medical Society met at the State Building on Tuesday evening, November 13. After the reading of communications the society resolved itself into an informal meeting and discussed the result of the election for hospital trustee, which was held on November 6. The verbal report of the secretary-treasurer was then given. The treasurer, by order of the society, had turned over to the Nevada State Medical Society $125 to defray balance of expense incurred on the annual banquet; had paid advertising bills to the amount of $24; and by order of the society had paid two checks of $100 each to Dr. George L. Servoss, secretary of the Political Committee. A belated itemized report, entitled "The Humphrey Campaign," sent in by messenger, revealed the fact that the society was in debt $72.21 to the Humphrey Campaign Committee, the committee having spent $276.19. The secretary said that there were possibly $15 to $20 dues yet to come in, and after paying minor expenses the society would enter the year 1935 with an indebtedness of about $60, which could be met from the usual membership assessment for the incoming year.

The December or annual dinner meeting will be in charge of a committee of three, appointed by President Paradis. This committee is to report back to the society in time sufficient to arrange all details. . . .

THOMAS W. BATH, *Secretary.*

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings

American Medical Association, Atlantic City, New Jersey, June 10-14, 1935. Olin West, M. D., 535 North Dearborn Street, Chicago, Secretary.

California Medical Association, Yosemite National Park, May 13-16, 1935. Frederick C. Warnshuis, M. D., 450 Sutter Street, San Francisco, Secretary.

Radiological Society of North America, Memphis, Tennessee, December 3-7, 1934. Donald S. Childs, M. D., 607 Medical Arts Building, Syracuse, New York, Secretary.

Medical Broadcasts*

American Medical Association Health Talks. — The American Medical Association broadcasts on a western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, central standard time.

The American Medical Association broadcasts on a Blue network of the National Broadcasting Company each Tuesday afternoon from 4:00 to 4:15 central standard time.

* * *

San Francisco County Medical Society. — The radio broadcast program for the San Francisco County Medical Society for the month of December is as follows:

Tuesday, December 4—KJBS, 11:15 a.m., and KFRC, 1:15 p.m. Subject: Detection of Tuberculosis by the Tuberculin Test.

Tuesday, December 11—KJBS, 11:15 a.m., and KFRC, 1:15 p.m. Subject: Splinting the Lung.

Tuesday, December 18—KJBS, 11:15 a.m., and KFRC, 1:15 p.m. Subject: Questions and Answers About Tuberculosis.

Tuesday, December 25 and January 1 are legal holidays. No broadcast.

This December series is given with the coöperation of the California Tuberculosis Association as a part of its annual program at this time of the year.

* * *

Los Angeles County Medical Association. — The radio broadcast program for the Los Angeles County Medical Association for the month of December is as follows:

Saturday, December 1, KFI, 9 a.m. Subject: Medicine and Human Progress, No. 14.

Saturday, December 1 — KFAC, 10 a. m. Subject: Medicine and Human Progress, No. 14.

Tuesday, December 4—KECA, 11:15 a.m. Subject: Medicine and Human Progress, No. 15.

Saturday, December 8—KFI, 9 a.m. Subject: Medicine and Human Progress, No. 15.

Saturday, December 8 — KFAC, 10 a. m. Subject: Medicine and Human Progress, No. 15.

Tuesday, December 11—KECA, 11:15 a.m. Subject: Medicine and Human Progress, No. 16.

Saturday, December 15—KFI, 9 a.m. Subject: Medicine and Human Progress, No. 16.

Saturday, December 15 — KFAC, 10 a. m. Subject: Medicine and Human Progress, No. 16.

Tuesday, December 18—KECA, 11:15 a.m. Subject: Medicine and Human Progress, No. 17.

Saturday, December 22 — KFI, 9:00 a. m. Subject: Medicine and Human Progress, No. 17.

Saturday, December 22 — KFAC, 10 a.m. Subject: Medicine and Human Progress, No. 17.

Tuesday, December 25—KFI, 11:15 a.m. Christmas Day. No program.

Saturday, December 29 — KFI 9:00 a. m. Subject: Medicine and Human Progress, No. 18.

Saturday, December 29 — KFAC, 10 a. m. Subject: Medicine and Human Progress, No. 18.

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to CALIFORNIA AND WESTERN MEDICINE, 450 Sutter Street, San Francisco, for inclusion in this column.

American Medical Association Scientific Exhibit at Atlantic City.—Application blanks are now available for space in the scientific exhibit at the Atlantic City session of the American Medical Association, June 10 to 14, 1935. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient. Applications close February 25, 1935.

Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

Records for Tuberculosis Sanatoria.—For the first time it is now possible for tuberculosis sanatoria to keep uniform and complete records of all material facts about their patients, available at all times for instant consultation. This important improvement in health bookkeeping is a result of two years' work done by a committee of the American Sanatorium Association, assisted in a secretarial capacity by members of the staff of the National Tuberculosis Association. The twenty-three new forms which have been prepared are obtainable from the Livingston Press, Livingston, New York.

Formerly it was often necessary, when information of a consecutive or cumulative nature was needed, to expend considerable time and effort to collect and arrange pertinent facts from records made at different times, and reposing in various forms which were kept primarily for other reasons than the one which might now be in mind. The new system has the added advantage in rendering available, as a matter of routine, facts which serve to satisfy statistical needs from a national viewpoint.

Nineteen Thirty-Five Lane Lectures.—Gleb V. Anrep, M. D., D. Sc., F. R. S., professor of physiology, Egyptian University, Cairo, Egypt, will deliver the 1935 series of Lane Lectures at Stanford University School of Medicine in April.

The Lane Medical Lectures were established in 1896 by Dr. Levi Cooper Lane of San Francisco, the founder of the Cooper Medical College, which, in 1908, became the School of Medicine of Leland Stanford Junior University.

Every two years some eminent physician or scientist who has made a definite contribution in the field of medicine is secured to give a free course of lectures for medical students and the medical profession at large.

Doctor Anrep will give the twenty-fifth course of Lane Medical Lectures in 1935 from April 22 to 26 inclusive, the five lectures covering different phases of regulation of the cardiovascular system.

These lectures will be given in Lane Hall, Stanford University School of Medicine, Sacramento and Webster streets, San Francisco. Members of the medical profession are invited.

Narcotic Studies at University of California.—Opportunity for the further study of several heretofore little known narcotics has been afforded to the department of pharmacology of the University of California since it has been working in coöperation with the Division of Narcotic Enforcement of the State Department of Penology, according to Prof. Chauncey D. Leake.

"The association has been of great mutual advantage," Professor Leake said in commenting on the work between the State Department and the University, which was begun in April of this year. "The staff of the pharmacological laboratory has acquired a vast amount of important information regarding various types of addiction drugs, which is of scientific and medical importance.

"Investigations also have been made of the chemical methods of detecting many types of drugs and stimulants about which little has been known. Through this coöperation the Division of Narcotic Enforcement has not only been able to save a relatively large sum of money for the State, but has also been assured of the most satisfactory sort of scientific aid and advice."

Intensive scientific investigations of certain new relatively unknown, and possibly habit-forming drugs now are being planned in order that the law enforceing body will be prepared to meet circumstances which may arise if their use becomes prevalent.

Some New York Problems:

Excerpts from the November Bulletin of the Medical Society of the State of New York:

"Compulsory Health Insurance.—On October 27 the American Association for Social Security held a meeting in New York City to consider the 'final' draft of their 'model health insurance bill.' We understand no notable change was made . . . we may anticipate meeting the bill (as per copy sent for your information) when the legislature meets. Now is the time to plan and organize opposition. . . ."

* * *

"Pollak Foundation for Economic Research, Newton, Massachusetts. Send five cents for Pamphlet No. 28. See what is being done to promote public debate by colleges and high schools on the idea of socialized medicine. The list of reference matter contained in the booklet is worth the price and trouble."

* * *

"Current Popular Magazines.—Any and all of them! You'll generally find some readable composition constructed on a theme extracted from the 'Cost of Medical Care' background. Read them and observe what is being done to misinform the public and shape popular opinion to a favorable reception of 'socialized medicine.' If you do not want 'panel' political regimentation of your profession, do something more than 'resolve.'"

* * *

"What Can the County Societies Do? Close the Holes in Our Ranks!—Adopt the Wayne County slogan—'Get Your Man'—let every member mark a non-member and keep at him until he is in. No team can win with 'holes in the line'!"

* * *

"Why Not?—Hold a meeting in each county for non-members. Give them the facts. Make them aware of the approaching crisis. Let them see how abridged the independent opportunity will be under the A. A. S. S. System."

* * *

"In Union There Is Strength."

(Signed) Committee on Economics, Medical Society of the State of New York.

New York Polyclinic Medical School and Hospital. The following program was presented at the Clinical Society meeting at the New York Polyclinic Medical School and Hospital on October 1, 1934:

Treatment of Brain Abscess (lantern slides)—Joseph E. J. King, M. D.

Advantages of Electrosurgical Obliteration of the Gall-Bladder Over Classical Cholecystectomy (motion pictures)—Max Thorek, M. D., Chicago.

The program below was presented at the Clinical Society meeting at the New York Polyclinic Medical School and Hospital on November 5, 1934:

Amebic Dysentery—Damaso de Rivas, M. D., University of Pennsylvania.

The Use of Artificial Pneumothorax in the Treatment of Lobar Pneumonia—Francis G. Blake, M. D., Yale University.

Medico-Zoölogical Aspects of the Race Problem—Colonel C. W. Stiles, United States Army, Washington, D. C.

Dr. Murray B. Gordon, adjunct professor of pediatrics, started a series of six lectures on Endocrinology in Children, beginning on Tuesday, November 13, 1934.

This and That:

One Hour a Month.—If every member of the California Medical Association would devote but "One Hour" a month for the purpose of doing something for his county and state medical organization, it would be but a comparatively short time before California would evidence desirable and more achieving accomplishments. Think of it—5,640 hours a month of constructive work! What might this effort accomplish?

One hundred per cent organized profession.
Active county units.
Fellowship and friendliness.
Establishing sound public opinion.

Are you dissatisfied with your county organization? What are you doing for it?

Are you dissatisfied with your county program? What are you doing to better them?

Are you dissatisfied with the attendance? What are you doing to increase it?

It is time for the "you's" to become busy.

* * *

TEN QUESTIONS

(For answers, see below)

1. As a member of your county society and the California Medical Association, what is your standing in the American Medical Association?
2. What restrictions are placed on advertisements relating to remedies or therapeutic drugs?
3. What Council approves hospitals for interne training?
4. Where do you file your license to practice?
5. What precautions should you observe when treating fractures?
6. What are the requirements to become a Fellow of the American Medical Association?
7. After what length of time are claims for malpractice outlawed?
8. What constituent unit determines eligibility in state and national bodies?
9. When have you a right to operate upon a patient without the patient's consent?
10. On what date and where will the Association's next annual meeting be held?

* * *

TEN ANSWERS

(See above for questions)

1. You are a member of the American Medical Association. To become a Fellow requires an application and payment of $7 annual dues. The *Journal of the American Medical Association* is sent to Fellows without additional charge.

2. They must be U. S. P. or N. F. preparations or else they must be approved by the Council on Pharmacy and Chemistry of the American Medical Association.
3. American Medical Association Council on Medical Education and Hospitals.
4. With county clerk in the county in which you reside.
5. Secure x-rays before and after reduction, during treatment and on discharge; obtain consultation, keep a case record.
6. See answer to No. 1.
7. Until minor has reached the age of twenty-two. In adults, one year after date of last service.
8. County Medical Society.
9. In an emergency when patient is unconscious and then only after consultation.
10. May 13 to 16, 1935. Yosemite National Park.

CORRESPONDENCE

Subject of following letter: A communication from the Los Angeles Society of Ophthalmology and Otolaryngology, on the subject of California's care of its needy blind.

To the Editor:—Enclosed please find copy of resolutions passed at the last meeting of the Los Angeles Society of Ophthalmology and Otolaryngology in regard to the needy blind.

I believe these should be brought to the attention of the readers of California and Western Medicine, and trust that you will find it advisable to publish them in its next issue.

Yours truly,
Pierre Violé, M.D., *Secretary.*

RESOLUTIONS

Resolved, That the Los Angeles Society of Ophthalmology and Otolaryngology go on record as expressing its opinion that the examination blanks now in use by the Division for the Blind of the California State Department of Public Welfare are inadequate, and do not best protect the interests of either the tax-paying citizens or of the really needy blind citizens of California; and be it further

Resolved, That the secretary of this Society be instructed to forward copies of this resolution to His Excellency, Governor Frank Merriam, to the Director of the California Department of Public Welfare, and to the Chief of its Division for the Blind; and be it further

Resolved, That the constituted authorities of the State of California be requested to work out a new application blank, as authorized by the existing law, for citizens who as blind persons seek aid from state and county treasuries; this blank to be drafted so that the information contained therein will be accurate and valuable and to the joint interests of California taxpayers, needy blind persons, and specialists in diseases of the eye.

CHIROPRACTORS AND NATUROPATHS DEFEATED*

Chiropractic and naturopathy received a noteworthy setback November 6, when the people of Arizona, California and Oregon decisively defeated at the polls measures for the aggrandizement of those cults submitted under the initiative system of legislation.

In Arizona the naturopaths wanted an independent naturopathic examining and licensing board. They wished to have naturopaths exempted from the requirements of the basic science law and authority for every licensed naturopath to exercise every right and privilege given by law to any practitioner of the healing art.

In California a schism in the chiropractors of the State sought by an initiative measure to add to chiropractic prerogatives a monopoly of the right to practice physical therapy, by providing for the issue to licensed chiropractors only of licenses to practice physical therapy, authorizing the holders "to practice obstetrics; to use, prescribe and practice prophylactic hygiene and sanitation and dietetics, including, in any form, herbs, oils and all animal and vegetable foods; and to use all systems, methods or instruments in diagnosis, including the use of roentgen rays." Under the chiropractic initiative all licensed chiropractors in the State were to constitute a public corporation, with officers elected by the members, with power to regulate chiropractic practice, to levy dues on its members and to discipline its members. The dominant group of chiropractors in the State publicly denounced the measure, saying that the chiropractic initiative measure of 1922 had vested in them all authority necessary to enable them to practice legitimate chiropractic. Another California naturopathic initiative sought to establish naturopathy by law as a distinct school of healing, with its own independent examining and licensing board. It proposed to organize all licensed naturopaths in the State into a self-governing public corporation. Naturopathy was defined by the measure as including "physiotherapy, physical therapy, phytotherapy, biochemistry, the use of antiseptics, anesthetics, applied therapeutics and prophylactic hygiene and sanitation; the science and art of diagnosis, which enables the naturopathic physician to direct, advise, prescribe, dispense or apply food, water, roots, herbs, plants, oils, lights, heat, color, exercises, active and passive, manipulations, correcting vital tissue, organs or anatomical structures by manual, mechanical or electrical treatment, instruments and appliances, x-ray, or any and all other natural agencies that have been used in the past, that are now in use, or that may be used in the future, to assist nature in restoring a physiological and psychological interfunction for the purpose of restoring and maintaining a normal state of health, mentally and physically."

In Oregon, chiropractors and naturopaths already have their independent examining and licensing boards. A basic science law that went into effect January 1, 1933, however, seems to have given alarm to chiropractors and naturopaths generally, and particularly to a struggling chiropractic school in the State, whose graduates, under the basic science law, were threatened with the necessity of having to show that they had been adequately instructed in anatomy, physiology, chemistry, pathology and hygiene, before an independent board, before they could appear before the chiropractic board for examination. The chiropractors of the State therefore combined with the naturopaths in proposing as an initiative measure an amendment to the State Constitution that would have abolished the examinations in the basic sciences under the Basic Science Law. The measure was so worded as to permit the governing board of the chiropractic and naturopathic bodies to enlarge the scope of practice of their adherents in such a way as to permit them to use drugs and possibly even to enter into the general practice of obstetrics and surgery.

Through the effective work of the state medical associations of Arizona, California and Oregon, and with the aid of many public-spirited citizens both individually and in organizations, the people of these states were kept informed as to the dangers threatened by the proposed initiative measures. As has been mentioned, decisive defeats resulted in each state. The people of Arizona, California and Oregon are to be congratulated on maintaining their standards of medical care. Apparently the majority of the voters recognized the necessity for protection against ignorance, superstition and incompetence in medical care.—Editorial, *Journal of the American Medical Association,* November 17, 1934.

* See also page 410 for additional comment.

ROSTER OF THE FIFTY-FIRST CALIFORNIA LEGISLATURE*

State Senators

District No. 1, Harold J. Powers (R), Eagleville.

District No. 2, Henry McGulnness (D), Dunsmuir.

District No. 3, Harry A. Perry (R), R. F. D. 46, Ferndale.

District No. 4, George M. Biggar (R), Covelo.

District No. 5, John B. McColl (R), Redding.

District No. 6, Charles H. Deuel (D), 119 Broadway, Chico.

District No. 7, Jerrold L. Seawell (R), Roseville.

District No. 8, D. Jack Metzger (R), 641 Main Street, Red Bluff.

District No. 9, A. L. Pierovich (D), Jackson.

District No. 10, W. P. Rich (R), 424 Fifth Street, Marysville.

District No. 11, Frank L. Gordon (R), Gordon Valley, Suisun.

District No. 12, Herbert W. Slater (D), 800 Fourth Street, Santa Rosa.

District No. 13, Charles F. Reindollar (R), San Rafael.

District No. 14, Walter McGovern (R), 2750 Fulton Street, San Francisco.

District No. 15, Thomas McCormack (R), Rio Vista.

District No. 16, William F. Knowland (R), 860 Grand Street, Alameda.

District No. 17, Will R. Sharkey (R), Martinez.

District No. 18, Sanborn Young (R), Los Gatos.

District No. 19, Thomas P. Scollan (Ind), 2320 X Street, Sacramento.

District No. 20, Bradford S. Crittenden (R), 145 E. Harding Way, Stockton.

District No. 21, Harry L. Parkman (R), 934 Rosewood Drive, San Mateo.

District No. 22, J. M. Garrison (D), Route 1, Box 1826, Modesto.

District No. 23, Bert B. Snyder (R), Santa Cruz.

District No. 24, Andrew R. Schottky (R), 243 22nd Street, Merced.

District No. 25, Edward H. Tickle (R), Carmel.

District No. 26, Dan E. Williams (R), Jamestown.

District No. 27, Charles King (D), Hanford.

District No. 28, Karl P. Keough (D), Bishop.

District No. 29, Chris N. Jespersen (R), Atascadero.

District No. 30, Ray W. Hays (R), 3261 Balch Avenue, Fresno.

District No. 31, Edgar W. Stow (R), P. O. Box 545, Santa Barbara.

District No. 32, Frank W. Mixter (R), 303 East Palm Street, Exeter.

District No. 33, Walter H. Duval (R), Santa Paula.

District No. 34, J. I. Wagy (R), 1909 Second Street, Bakersfield.

District No. 35, Nelson T. Edwards (R), Orange.

District No. 36, Ralph E. Swing (R), California Hotel, San Bernardino.

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* See also editorial comment on page 412. Legends: D (Democrat), R (Republican) and Ind (Independent).

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VII, No. 12, December, 1909

From Some Editorial Notes:

The End of a Volume.—The present issue completes the seventh volume of your *Journal,* which compares very favorably with the preceding volumes. The *Journal* is your own journal; the articles in it are your own productions, and if they do not come up to the mark to which you think they should come, it is your own fault. Physicians in California are doing as good work as any in any State in the land, and are doing better work today, on an average, than ten years ago. And your *Journal* has helped somewhat. . . . What the *Journal* shall be is all in the hands of the members of the Society; the better their work for their county society and for the State Society, the better will be the material which goes out to the world in their own *Journal.* Let us all keep eternally at it—improving, building, enlarging, progressing, always striving for better work, for better results, for progress in medicine at home, and for a closer knitting together of our several units into solid societies, each working for the greater benefit of our charge, the public health.

* * *

Animal Experimentation.—The address of Charles W. Eliot, delivered on Ether Day at the Massachusetts General Hospital, appears in a recent issue of the *Boston Medical and Surgical Journal.* The ex-President of Harvard surveys the field of medicine from a mountain-top, and so broad and comprehensive is his horizon that his view will be of interest to every practitioner. His arguments for animal experimentation deserve a wider reading than the columns of this excellent journal afford. . . .

* * *

Tropical Medicine.—It is not any longer necessary to emphasize before the medical profession of this State the special position of responsibility to the nation that California occupies in the matter of tropical medicine. The importance of the subject demands a recognition on the part of the whole profession of the Pacific Coast of the various so-called tropical diseases which are now present in, or may at any time invade our territory. . . .

* * *

Cholera in Russia.—The reports of thousands of deaths from the epidemic of Asiatic cholera now raging in European Russia furnish an instance of a "tropical" disease invading a temperate and arctic region. . . .

* * *

Pellagra.—Pellagra in the United States is a curious illustration of a disease long unrecognized but found to be common when once the general profession learned to diagnose it. . . .

Address of Dr. Henry Gibbons, Jr., at the Commencement Exercises, Medical Department, Leland Stanford, Jr., University.—My few words are but a brief and partial historical sketch of the development of medical education in California. Fifty years have elapsed since the establishment of the first medical college on this western coast, largely through the instrumentality of Elias Samuel Cooper, for whom Cooper Medical College was named. I find, by reference to the meager minutes of this early period, that the trustees of the

* This column strives to mirror the work and aims of colleagues who bore the brunt of Association work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and new members.

(Continued in Front Advertising Section, page 22)

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA*

BOARD OF MEDICAL EXAMINERS

By CHARLES B. PINKHAM, M. D.
Secretary-Treasurer

News

"The United States Supreme Court in effect yesterday refused to set aside fraud orders issued by the Post Office Department against Dr. Clayton E. Wheeler, self-described gland specialist of San Francisco and Los Angeles. Doctor Wheeler resides at 535 Powell Street. The court declined to review the action of the Federal District Court for Southern California, sustaining the post office orders, according to the Associated Press. Doctor Wheeler is accused of making misleading statements in his advertising literature, including exaggerated claims as to the effectiveness of his gland treatment for senility. Doctor Wheeler claimed that the fraud order was depriving him of daily mail containing checks and money orders. His practice of selling home treatment by mail has been discontinued, Doctor Wheeler said." (San Francisco *Chronicle,* November 6, 1934.)

"From time to time the question of whether or not the giving of an anesthetic constitutes the practice of medicine and comes under the Medical Practice Act, has been raised by certain doctors of medicine. . . . Although legal opinions have been rendered on the subject from time to time to the effect that the giving of an anesthetic *per se* is not the practice of medicine, there has been no record of the case having been tried in the courts . . ." said an article published in the *Western Hospital Review,* September, 1934, issue, which article contained in full the findings of fact and conclusions of law, as rendered by Judge Allen B. Campbell in a case tried in Los Angeles.

"Dr. R. D. Brisbane, Superintendent of Sutter Hospital, last night warned Sacramento residents against what he termed the fake sale of health service. Two men, Doctor Brisbane said, are operating here, selling health insuranee for a dollar a month, which supposedly entitles the purchaser to hospitalization in any hospital and choice of any doctor in case of illness. The Superintendent said the California Hospital Association has not authorized the sale of such insurance." (Sacramento *Union,* October 19, 1934.)

"Dr. Robert E. Haslett, Chico chiropractor, formerly of Sacramento, is free on a $2,000 bond following his arrest and arraignment yesterday on a charge of violation of Section 274 of the Penal Code by performance of an abortion on an Orland wife, already the mother of three children. . . . Haslett was arraigned before Justice of the Peace L. E. Newton, who issued the warrant. The complaint recites the operation was performed in Chico on October 22, last, and that it was not necessary to preserve the patient's life. . . ." (Sacramento *Bee,* November 14, 1934.)

"One woman was shot and killed and another critically wounded today and shortly afterward Dr. William J. Jacobs, forty-five, prominent physician, was placed under arrest on suspicion of murder. . . ." (Press dispatch, dated Santa Barbara, November 7, and printed in the San Francisco *Examiner,* November 8, 1934.)

"His motion for a new trial denied, Augusto Monasterio, convicted recently on two counts of practicing medicine without a license, was sentenced yesterday

* The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

(Continued in Front Advertising Section, page 23)

ELLIOTT TREATMENT

For acute and chronic infections involving

The pelvis, ovaries, Fallopian tubes and prostate; inflammation of sinuses and bladder; leukorrhea and dysmenorrhea.

ELLIOTT TREATMENT provides, internally, with controlled pressure, constant dry heat as high as 130° F. to the involved areas.

We are the original designers and manufacturers of Treatment Regulators and "Anode" applicators for administering the Elliott Treatment.

Our appliance was used exclusively in obtaining all of the clinical data and medical background on the Elliott Treatment.

Articles on the Elliott Treatment have appeared in the Journal of the American Medical Association, American Journal of Obstetrics and Gynecology, the American Journal of Surgery.

Clinical data regarding the treatment and results obtained by the use of our equipment, covering a period of over five years, is available and will be gladly furnished upon request.

CAUTION

In 1934, imitations of our equipment have been offered to the profession, resulting in the purchase, in certain instances, of equipment that has neither been tried nor approved by the profession.

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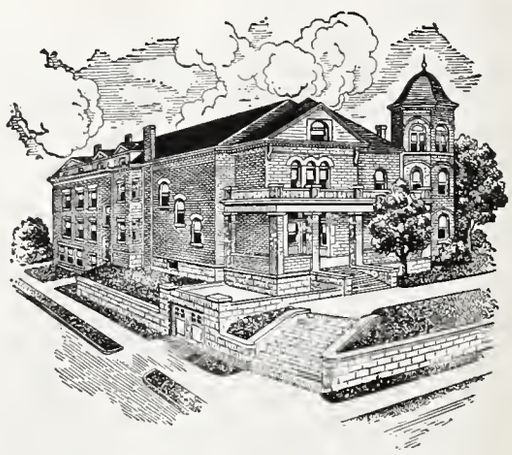

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To the physician prescribing gland products we urge specification of "Wilson," because it connotes a product made at the source of supply from fresh glands, processed promptly, with the aim of conserving maximum hormone activity, in a laboratory devoted exclusively to the endocrine field.

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STANDARDIZED ANIMAL DERIVATIVES, LIGATURES and DIGESTIVE FERMENTS

Many uses for this delicious high-caloric food-drink...

TO THE convalescent—to the expectant or nursing mother—to the active, growing child a Cocomalt milk beverage is a delicious change from the monotony of plain milk.

When vitality is at low ebb and appetite lacking —Cocomalt mixed with milk is suggested as a valuable adjunct to the diet.

Accepted by the American Medical Association Committee on Foods — licensed by the Wisconsin University Alumni Research Foundation—Cocomalt is easily digested, quickly assimilated, *high in caloric value.* It provides *extra* proteins, carbohydrates and minerals (calcium and phosphorus)—plus Vitamin D for proper utilization of these essential minerals.

Cocomalt is composed of sucrose, skim milk, selected cocoa, barley malt extract, flavoring and added Vitamin D. Prepared as directed, it adds 70% more food energy to a cup or glass of milk.

Cocomalt comes in powder form only, easy to mix with milk—delicious HOT or COLD. At grocery and good drug stores in ½-lb. and 1-lb. air-tight cans. Also in 5-lb. cans for hospital use, at a special price.

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Calso Water: An efficient method of supplying the normal ALKALINE SALTS for counteracting ACIDOSIS.

Calso Water: Made of distilled water and the ALKALINE SALTS (C. P.) normally present in the healthy body.

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Buy Christmas Seals

Help Fight Tuberculosis

Lilly Research Laboratories Formally Opened.—More than a thousand investigators and research workers were present at the formal opening of the new Lilly Research Laboratories at Indianapolis on October 11, 1934. The gathering of distinguished visitors representing many noted bodies and famous institutions in this and foreign countries as well, assembled in a mammoth tent, erected for the occasion, adjacent to the Lilly Laboratories.

At the formal opening exercises, in the afternoon, Eli Lilly, head of the Lilly organization, presided as chairman. Mr. J. K. Lilly, chairman of the board of directors, was introduced and responded briefly on "Research in Manufacturing Pharmacy" from the time of his entrance in the organization in 1876 up to the present, when there is so much evidence of the fact that medical science, in becoming an integral part of our social structure, has, in turn, become in a broad measure dependent upon industrial development.

Following Mr. Lilly's remarks, Dr. Irving Langmuir, director of research for the General Electric Company, discussed "The Unpredictable Results of Research." The speaker stressed the point that fundamental research should be pursued by industrial corporations regardless of any immediate possible commercial return therefrom. He gave an account of his

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purely theoretical gas adsorption studies which ultimately led to the development by the General Electric Company of their present highly efficient electric-light bulb.

The chairman then introduced Sir Frederick Banting, who talked on "The Early History of Insulin." He gave an account of the early experiments conducted by Doctor Best and himself which first demonstrated the existence of Insulin, and expressed his great appreciation of the coöperation which he and his associates had received from the staff of the Lilly Research Laboratories in the development of a practical, large-scale procedure for the production of Insulin.

Sir Henry Dale, director of the National Institute for Medical Research, London, and secretary of the Royal Society, was the last speaker on the afternoon program. He chose as his topic "Chemical Ideas in Medicine and Biology." Sir Henry spoke of the immediate objectives of research in such laboratories as those of Eli Lilly & Company, and of their natural and proper differences from those of the laboratories supported by academic or public endowment. It was his thought, however, that the differences in result for the progress of medical science are often more formal than real. He expressed the hope that the growth of coöperation between those working in these different spheres might yet bring to many the rather rare privilege that had come to him of migrating from one to the other and back again, and thus of knowing at first-hand the best that each can offer.

He did not suggest that palliative treatment no longer existed in medical practice or that its complete elimination was expected or even desirable. He cited the fact that alleviation of symptoms not only brings the richest reward of gratitude, but said that it might be the most urgent medical duty.

Sir Henry referred to the fact that he was speaking in the presence of Sir Frederick Banting and in the place where the large-scale production of Insulin had

(Continued on Next Page)

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A Limited General Hospital of 200 Beds

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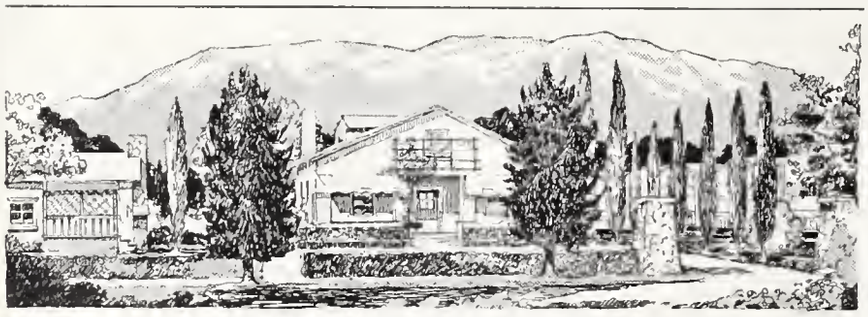

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Has established and maintained a reputation, both among physicians and patients, for service and satisfaction.

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(Continued from Preceding Page)

its earliest organization, and that he felt he need not remind his audience of the revolutionary change which has taken place in the treatment of a disease that only a few short years ago was the despair of the physician.

"The transformation of the whole aspect of one disease by the discovery of Insulin has attracted a more general attention," said the speaker, "than almost any other advance in medical science within our time." He was of the opinion that this discovery might be considered indicative of the wider progressive change in therapeutic method, based upon new knowledge of the causes of disease and aiming at the removal of those causes. . . .

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Promoting these ideas—in general, not through specific diet instruction—is a part of the function of a dairy products company, in the opinion of Golden State Company.

But, of more importance is the supplying of milk of fine flavor and truly balanced in all its elements. Here it is that this Company's application of the findings of public research—and their amplification by Golden State's private research—is justified.

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This institution is for the treatment of medical tuberculosis and of selected cases of extrapulmonary (so-called surgical) tuberculosis.

The Colfax School for the Tuberculous consists of five Hospital Units with beds for patients who come unattended and a Housekeeping Cottage Colony for patients and their families.

The Colfax School for the Tuberculous offers the following advantages:

1. Patients are given individual care by experienced tuberculosis specialists. The patient is treated according to his individual needs.

2. Patients are taught how to secure an arrest of their disease, how to remain well when once the disease is arrested, and how to prevent the spread of the disease.

3. Patients have the advantage of modern laboratory aids to diagnosis and of all modern therapeutic agencies.

4. The climate of Colfax enables the patient to take the cure without discomfort twelve months in the year. We believe climate is secondary to medical supervision and rest, but the fact remains that it is easier to "cure" under good climatic conditions than where these climatic conditions are absent.

5. Colfax is accessible. It is on the main line of the Ogden Route of the Southern Pacific R. R. and has excellent train service. It can be reached by paved highway, being on the Victory Highway, with paved roads all the way to Colfax.

For further information address

ROBERT A. PEERS, M. D., *Medical Director*
Colfax, California

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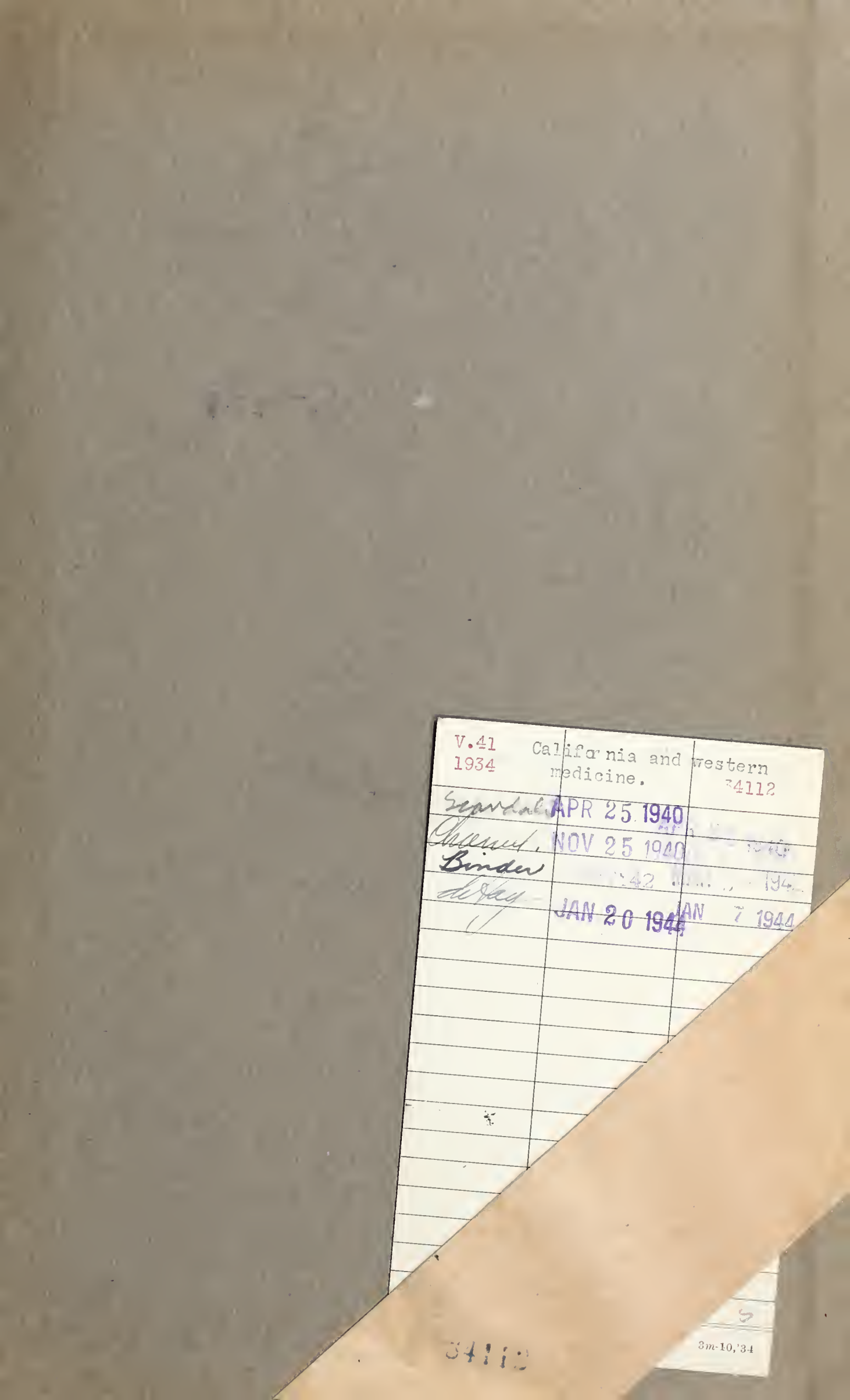

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